ORDER NO. HAD8704073C8

# Service Manual

## Cassette Receiver
## SA-X800L

**Color**

(K)...Black Type

| Color | Areas |
|---|---|
| (K) | [E, E5]...Continental Europe. |
| (K) | [EB].......Belgium. |
| (K) | [EF].......France. |
| (K) | [EK].......United Kingdom. |
| (K) | [EH].......Holland. |
| (K) | [XL]........Australia. |

DOLBY SYSTEM

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

## SPECIFICATIONS

### (DIN 45 500)

### ■ AMPLIFIER SECTION

| | |
|---|---|
| **40 Hz～16 kHz continuous power output both channels driven** | 2×18 W (THD 1%, 8Ω) |
| **1 kHz continuous power output both channels driven** | 2×20 W (THD 1%, 8Ω) |
| **Total harmonic distortion half power at 1 kHz** | 0.05% (8Ω) |
| **Power bandwidth both channels driven, −3 dB** | 15 Hz～40 kHz (8Ω) |
| **Damping factor** | 22 (8Ω) |
| **Input sensitivity and impedance** | |
| **PHONO** | 3.0 mV/47 kΩ |
| **CD** | 250 mV/20 kΩ |
| **Frequency response** | |
| **PHONO** | RIAA standard curve<br>±0.8 dB (30 Hz～15 kHz) |
| **CD** | 18 Hz～50 kHz (−3 dB) |
| **Tone controls BASS** | 50 Hz, +10 dB～−10 dB |
| **TREBLE** | 12.5 kHz, +10 dB～−10 dB |
| **Load impedance** | 8Ω～16Ω |

### ■ FM TUNER SECTION

| | |
|---|---|
| **Frequency range** | 87.50～108.00 MHz (0.05 MHz step) |
| **Sensitivity** | 14.7 dBf, (1.5 µV, IHF' 58) |
| **S/N 26 dB** | 1.2 µV (40 kHz mod., 75Ω) |
| **Total harmonic distortion** | |
| **1 kHz MONO** | 0.15% |
| **STEREO** | 0.3% |
| **S/N MONO** | 70 dB (78 dB, IHF) |
| **STEREO** | 65 dB (71 dB, IHF) |
| **Frequency response** | 20 Hz～15 kHz, +0.5 dB～−1.5 dB |
| **Image rejection at 98 MHz** | 40 dB |
| **Stereo separation 1 kHz** | 40 dB |
| **10 kHz** | 30 dB |
| **Antenna terminals** | 75Ω (unbalanced) |

### ■ AM TUNER SECTION

| | | |
|---|---|---|
| **Frequency range** | | |
| **MW** | | 522～1611 kHz (9 kHz steps)<br>530～1620 kHz (10 kHz steps) |
| **LW** | | 155～353 kHz (9 kHz step)<br>153～351 kHz (−2 kHz shift) |
| **Sensitivity (S/N 20 dB)** | | |
| **MW** | | 20 µV, 300 µV/m (999 kHz) |
| **LW** | | 40 µV (254 kHz) |
| **Selectivity** | **MW** | 55 dB (999 kHz) |
| | **LW** | 55 dB (254 kHz) |
| **Image rejection** | **MW** | 40 dB (999 kHz) |
| | **LW** | 50 dB (254 kHz) |

### ■ CASSETTE DECK SECTION

| | |
|---|---|
| **Deck system** | Auto stop double cassette system |
| **Track system** | 4-track, 2-channel |
| **Heads** | |
| **PLAY** | Solid permaloy head |
| **REC/PLAY** | Solid permaloy head |
| **Erasing** | Double-gap ferrite head |
| **Motor** | DC servo motor |

**Technics**

| | |
|---|---|
| **Recording system** | AC bias, 100 kHz |
| **Erasing system** | AC erase, 100 kHz |
| **Tape speed** | 4.8 cm/sec. (1-7/8 ips) |
| **Frequency response** | |
| **CrO₂** | 30 Hz∼16 kHz (DIN)<br>40 Hz∼15 kHz, +3 dB, −6 dB |
| **NORMAL** | 30 Hz∼15 kHz (DIN)<br>40 Hz∼14 kHz, +3 dB, −6 dB |
| **S/N (CrO₂ type tape)** | |
| **DOLBY NR in** | 66 dB (CCIR) |
| **DOLBY NR out** | 56 dB (A-WTD) |
| **Wow and flutter** | 0.2% (WRMS) |
| **Fast Forward and Rewind Time** | Approx. 150 seconds with C-60 cassette tape |

## ■ GENERAL

| | |
|---|---|
| **Power consumption** | 130 W |
| **Power supply** | |
| **For continental Europe** | AC 50 Hz/60 Hz, 220 V |
| **For Australia** | AC 50 Hz/60 Hz, 240 V |
| **For others** | AC 50 Hz/60 Hz, 110 V/127 V/220 V/240 V |
| **Dimensions** | 360 × 292 × 303 mm<br>(14-3/16″ × 11-1/2″ × 11-15/16″) |
| **Weight** | 6.2 kg (13.7 lb) |

**Note:**

Specifications are subject to change without notice.
Weight and dimensions are approximate.

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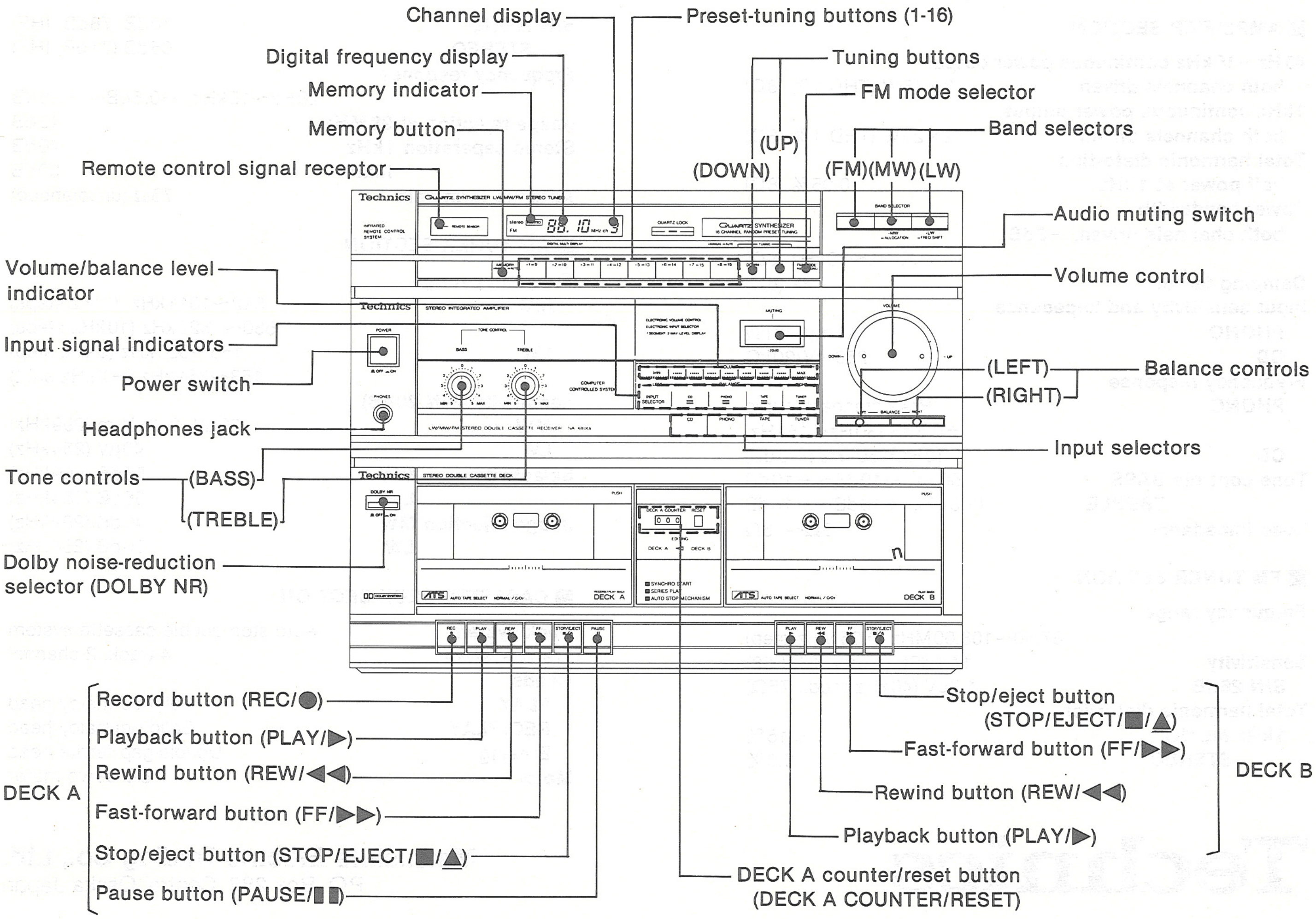
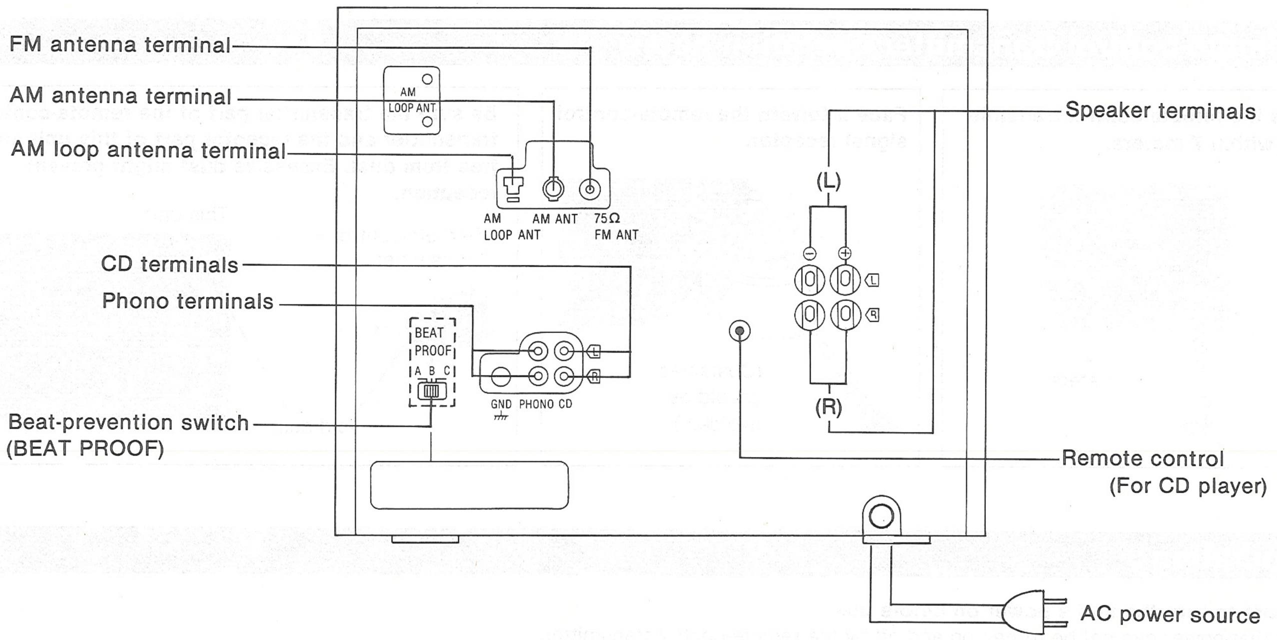
## ■ LOCATION OF CONTROLS

- **Front Panel**



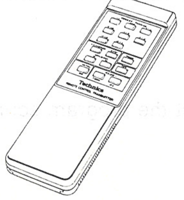
Channel display
Preset-tuning buttons (1-16)
Digital frequency display
Tuning buttons
Memory indicator
FM mode selector
Memory button
Band selectors
(UP)
(DOWN)
(FM)(MW)(LW)
Remote control signal receptor
Audio muting switch
Volume/balance level indicator
Volume control
Input signal indicators
(LEFT)
(RIGHT)
Balance controls
Power switch
Headphones jack
Input selectors
Tone controls
(BASS)
(TREBLE)
Dolby noise-reduction selector (DOLBY NR)
Technics
DECK A
Record button (REC/●)
Playback button (PLAY/▶)
Rewind button (REW/◀◀)
Fast-forward button (FF/▶▶)
Stop/eject button (STOP/EJECT/■/▲)
Pause button (PAUSE/▮▮)
DECK B
Stop/eject button (STOP/EJECT/■/▲)
Fast-forward button (FF/▶▶)
Rewind button (REW/◀◀)
Playback button (PLAY/▶)
DECK A counter/reset button (DECK A COUNTER/RESET)

- **Rear Panel**

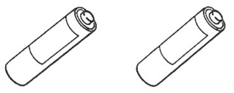

FM antenna terminal
AM antenna terminal
AM loop antenna terminal
AM
LOOP ANT
AM LOOP ANT
AM ANT
75Ω FM ANT
CD terminals
Phono terminals
BEAT PROOF
A B C
GND
PHONO
CD
L
R
Beat-prevention switch (BEAT PROOF)
Speaker terminals
(L)
(R)
⊖
⊕
Remote control (For CD player)
AC power source

## ACCESSORIES

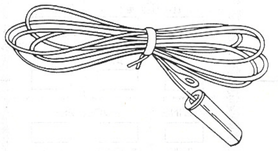
- Remote-control transmitter ...... 1
  (EUR64409)



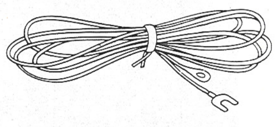
- Batteries ........................ 2
  (UM-3NE-2P)



- FM indoor antenna.............. 1
  (SSA269M [XL])
  (SSA270M [E, E5, EB, EF, EK, EH])

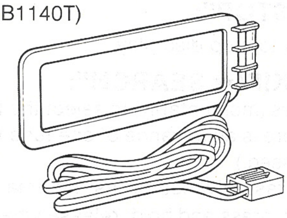


(For continental Europe)

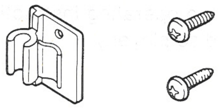


(For Australia and Others)

- AM loop antenna ............... 1
  (SPB1140T)



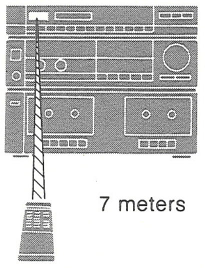
- AM antenna holder.............. 1
  (SMA231M) (XTN3+10AFZ)



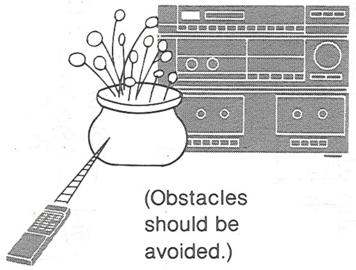
# ■ REMOTE-CONTROL TRANSMITTER

## Remote-control transmitter operation notes

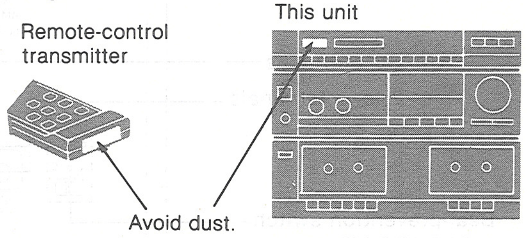
**Use the remote-control transmitter within 7 meters.**



**Face it toward the remote-control signal receptor.**


(Obstacles should be avoided.)

**Be sure the transmitter part of the remote-control transmitter and the receptor part of this unit are free from dust. Excessive dust might prevent reception.**


This unit
Remote-control transmitter
Avoid dust.

## Operation

**Be sure to turn the unit's power on before use.**
Note that power can not be turned on and off by the remote-control transmitter.

### Listening to compact discs

**(For Technics compact disc player with the remote-control terminals.)**

**“▶ PLAY/❚❚ PAUSE”:**

Press to start disc play.

(When pressed during disc play, the play will stop temporarily.)

**“■ STOP”:**

Press to stop disc play.

**“- SKIP/— SEARCH”:**

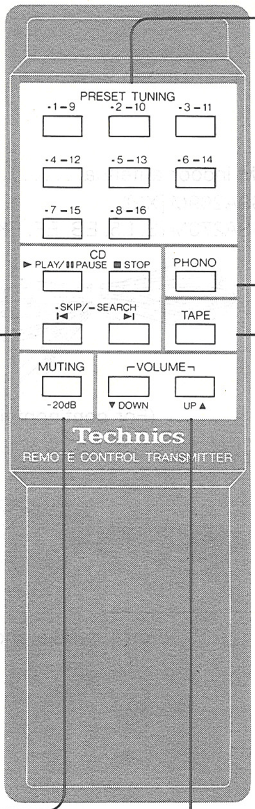
- Press (momentarily) to select the tune number. (There is an advance of one tune for each time pressed.)
- For fast advance or fast reverse during tune play, press and hold; release when the desired tune is reached.

⏮: for backward

⏭: for forward

(Refer to the operating instructions of the compact disc player.)

**(EUR64409)**


PRESET TUNING
·1 – 9
·2 – 10
·3 – 11
·4 – 12
·5 – 13
·6 – 14
·7 – 15
·8 – 16
CD
▶ PLAY/❚❚ PAUSE
■ STOP
PHONO
- SKIP/– SEARCH
⏮
⏭
TAPE
MUTING
-20dB
VOLUME
▼ DOWN
UP ▲
Technics
REMOTE CONTROL TRANSMITTER

### While listening to music

**Amplifier muting button (MUTING)**

Press this button if necessary to temporarily reduce the volume level.
Press once again to return to the previous volume level.

**Amplifier volume control (VOLUME/▼ DOWN • ▲ UP)**

Adjust the volume level.
(The volume level is indicated by the volume/balance level indicator on this unit.)

### Listening to radio broadcasts

**Tuner preset-tuning buttons (PRESET TUNING)**

Press to select a preset “channel”.

### Listening to the various sound sources

**“PHONO”:**

Press to select the program source (“PHONO”).

**“TAPE”:**

Press to select the program source (“TAPE”).

### After listening is finished

After listening is finished, be sure to reduce the volume level, and turn the power off.

**Note:**

The input selection, the volume level, the muting settings will be kept as they were at the time when the power is turned off.

## ■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following condition is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlined below.

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again.

**Note:**

When the protection circuitry functions, the unit will not operated unless the power is first turned off and then on again.

## ■ BEFORE REPAIR AND ADJUSTMENT

1. Turn off the power, Discharge both power supply capacitors (C702, C703 3300µF) through a 10Ω 5W resistor to ground. Do not short between C702 and C703. It may damage the capacitors.
2. After completion of repair, slowly apply the primary voltage by using a variac to avoid over current. Current consumption at 50Hz/60Hz in no signal mode should by shown with respect to supply voltage 220V/240V.

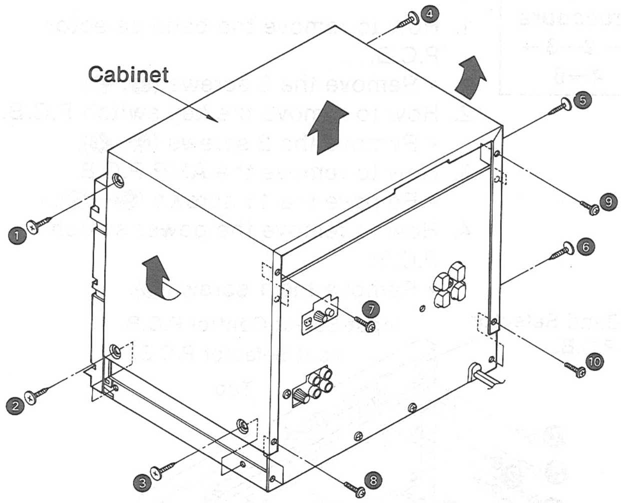
| Power supply voltage | | AC 220V | AC 240V |
|---|---|---|---|
| Consumed current | 50/60Hz | 60～160mA | 50～150mA |

## ■ DISASSEMBLY INSTRUCTIONS

**Ref. No. 1** **How to remove the cabinet**

**Procedure 1**

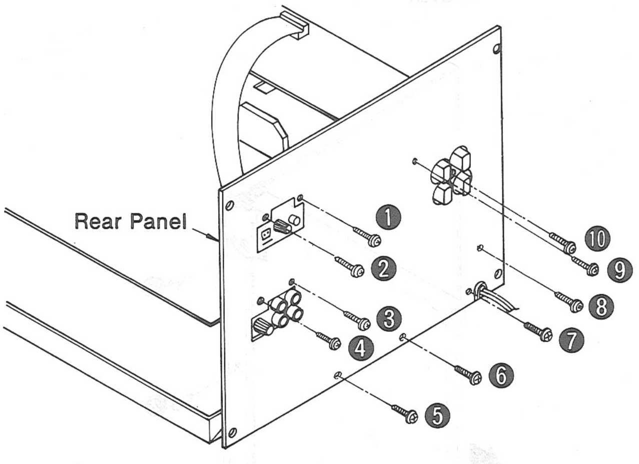
- Remove the 10 screws (❶～❿).



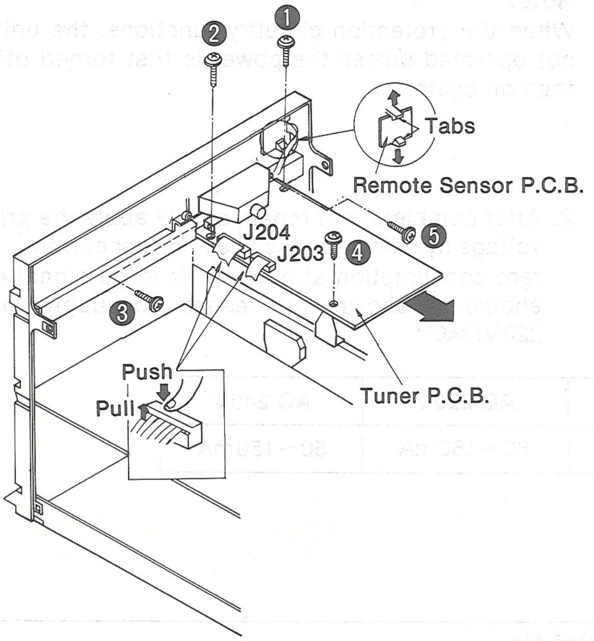
**Ref. No. 2** **How to remove the rear panel**

**Procedure 1→2**

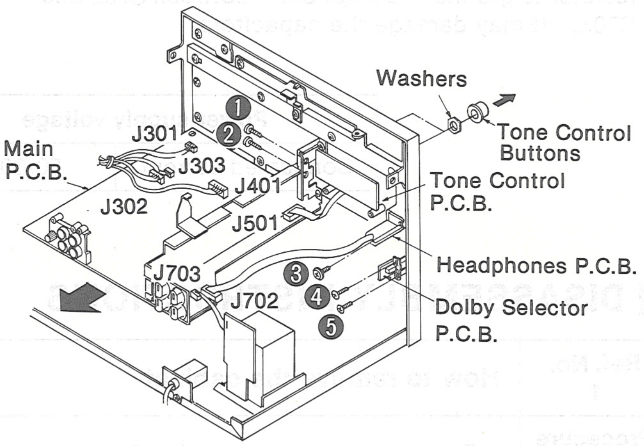
- Remove the 10 screws (❶～❿).



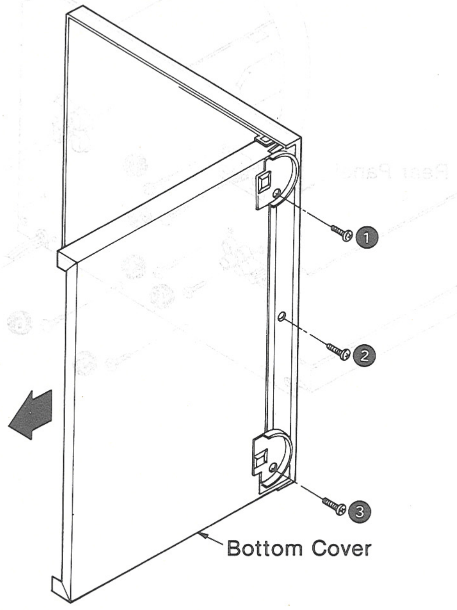
| Ref. No.<br>3 | How to remove the tuner P.C.B. and remote sensor P.C.B. |
|---|---|
| Procedure<br>1→2→3 | • Remove the 5 screws (❶~❺).<br>• Remove the 2 connectors (J203, J204).<br>• Remove the 2 tabs. |


❷
❶
Tabs
Remote Sensor P.C.B.
J204
❺
J203
❹
❸
Push
Pull
Tuner P.C.B.

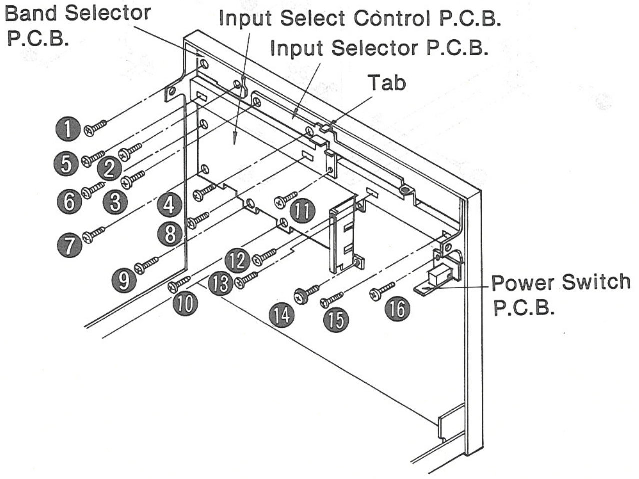
| Ref. No.<br>4 | How to remove the main P.C.B., headphones P.C.B., dolby selector P.C.B. and tone control P.C.B. |
|---|---|
| Procedure<br>1→2→4 | 1. How to remove the main P.C.B.<br>• Remove the 2 screws (❶, ❷).<br>• Remove the 4 connectors (J301~ 303, J401).<br>2. How to remove the jack P.C.B.<br>• Remove the 1 screw (❸).<br>3. How to remove the dolby NR switch P.C.B.<br>• Remove the 2 screws (❹, ❺).<br>4. How to remove the tone control P.C.B.<br>• Remove the 2 washers. |


Washers
Tone Control Buttons
Main P.C.B.
J301
❶
❷
J303
J401
Tone Control P.C.B.
J302
J501
J703
❸
Headphones P.C.B.
❹
J702
Dolby Selector P.C.B.
❺

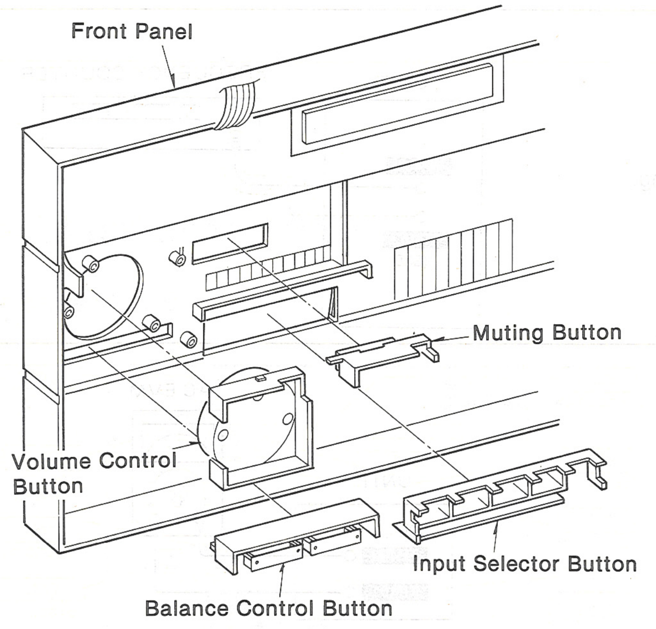
| Ref. No.<br>5 | How to remove the bottom cover |
|---|---|
| Procedure<br>1→2→5 | • Remove the 3 screws (❶~❸).<br>• Remove the 1 connector (J703) of main P.C.B. |


❶
❷
❸
Bottom Cover

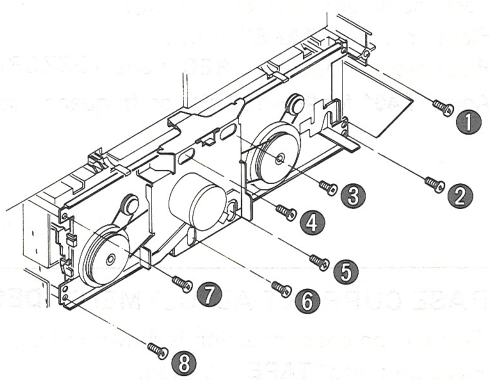
| Ref. No.<br>6 | How to remove the band selector P.C.B., input selector P.C.B., input select control P.C.B. and power switch P.C.B. |
|---|---|
| Procedure<br>1→2→3→<br>4→6 | 1. How to remove the band selector P.C.B.<br>• Remove the 2 screws (❶, ❷).<br>2. How to remove the key switch P.C.B.<br>• Remove the 2 screws (❸, ❹).<br>3. How to remove the AMP P.C.B.<br>• Remove the 11 screws (❺~⓯).<br>4. How to remove the power switch P.C.B.<br>• Remove the 1 screw (⓰). |


Band Selector P.C.B.
Input Select Control P.C.B.
Input Selector P.C.B.
Tab
❶
❺
❷
❻
❸
❹
❼
❽
⓫
❾
❿
⓬
⓭
⓮
⓯
⓰
Power Switch P.C.B.

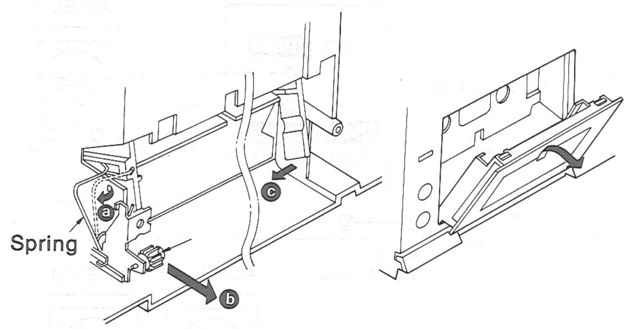
| Ref. No. 7 | How to remove the volume control button, muting button, balance control button and input selector button |
|---|---|
| Procedure<br>1→2→3→4→6→7 | • Remove the buttons from guide pin. |


Front Panel
Muting Button
Volume Control Button
Input Selector Button
Balance Control Button

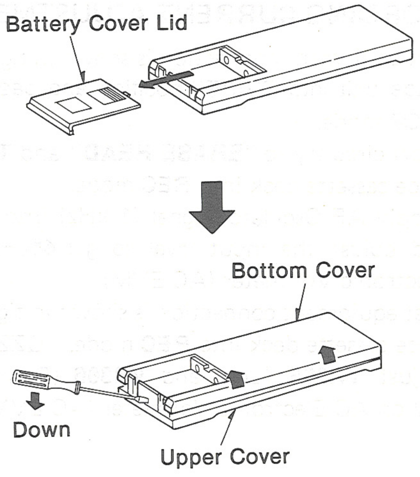
| Ref. No. 8 | How to remove the mechanism (DECK A, B) unit |
|---|---|
| Procedure<br>1→2→3→4→8 | • Remove the 8 screws (①~⑧).<br>• Remove the 4 connectors (J301~303, 401). |



| Ref. No. 9 | How to remove the cassette lid |
|---|---|
| Procedure<br>1→2→3→4→8→9 | • Remove the spring in the direction of allow (ⓐ) damper gear assembly in the direction of allow (ⓑ) with radio pliers or the like.<br>• Draw out the cassette holder lid in the direction of allow (ⓒ). |



| Ref. No. 10 | How to remove the remote control |
|---|---|
| Procedure<br>10 | • Remove the Battery cover lid.<br>• Insert a screwdriver blade between the upper and lower covers inside the battery compartment and them slowly loosen the bottom cover. |


Battery Cover Lid
Bottom Cover
Down
Upper Cover

## ■MEASUREMENTS AND ADJUSTMENTS

### ● LW/MW/FM

**Control positions and equipment used**

- AM and FM signal generator (AM and FM-SG)
- Stereo modulator
- Distortion analyser
- Oscilloscope
- AC and DC electronic voltmeter (EVM)
- Frequency counter
- Choke coil (100 µH)
- Resistor (100 kΩ)
- Ceramic capacitor (200 pF)
- AM dummy antenna

**Note:** For **T202 (MW IFT), L210 (MW OSC coil)** and **L211 (LW OSC coil)**, adjusted parts are supplied.
So, do not turn the cores of this parts.

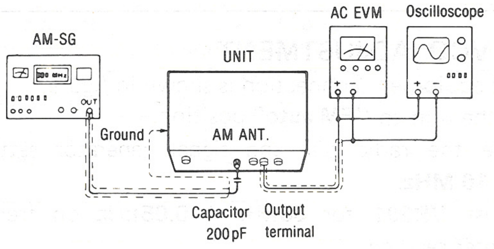
### MW-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**MW**" position.
3. Place the radio dial and signal generator setting to **612 kHz.**
4. Adjust **L208** for maximum output.
5. Place the radio dial and signal generator setting to **1503 kHz.**
6. Adjust **CT202** for maximum output.
7. Repeat steps 3.~6.

**Note:**

Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation............................30%
Modulation frequency.........400 Hz


AM-SG
OUT
UNIT
AC EVM
Oscilloscope
Ground
AM ANT.
Capacitor 200 pF
Output terminal

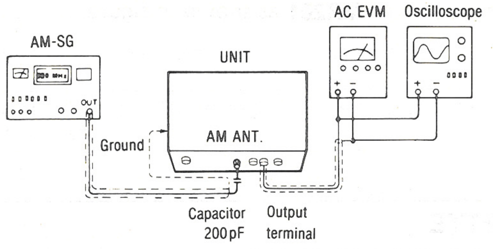
### LW-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**LW**" position.
3. Place the radio frequency display and signal generator setting to **155 kHz.**
4. Adjust **L209** for maximum output.
5. Place the radio frequency display and signal generator setting to **353 kHz.**
6. Adjust **CT203** for maximum output.
7. Repeat steps 3.~6.

**Note:**

Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation............................30%
Modulation frequency.........400 Hz


AM-SG
OUT
UNIT
AC EVM
Oscilloscope
Ground
AM ANT.
Capacitor 200 pF
Output terminal

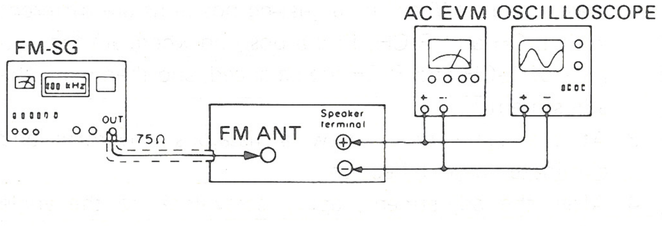
### FM-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Place unit into "**FM**" position.
3. Place the radio dial and signal generator setting to **100.10 MHz.** Add weak input so that noise is included in the output waveform.
4. Adjust **CT201** and **T201** so that the output waveform is vertically symmetrical.

**Note:**

As three output reading will be present, adjustments must be made at center frequency.

FM SIGNAL GENERATOR CONDITION
Modulation...............................100%
Modulation frequency...........1 kHz
Output level.............................66 dB


AC EVM
OSCILLOSCOPE
FM-SG
OUT
75Ω
FM ANT
Speaker terminal

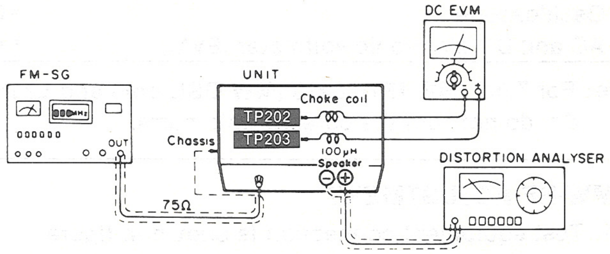
## FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to **"FM"** position.
3. Place the radio frequency display and signal generator setting to **100.10 MHz.**
4. Adjust **T203** core so that voltage measured in signal mode is **0 mV (0±30mV)** in **300 mV** range.
5. Adjust **T204** so that the distortion factor of Lch is minimized.
6. Repeat steps 4 and 5 a few times.
7. Make sure that the distortion factors of Lch and Rch are nearly the same with each other to minimum.

**Note:**

The adjusting screwdriver used should be made of resin.

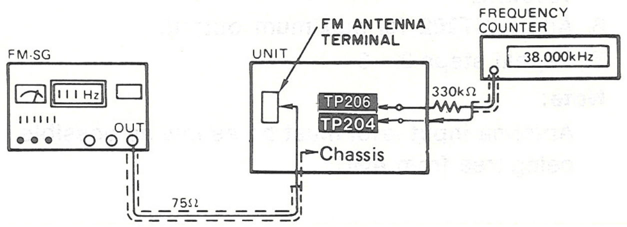
FM SIGNAL GENERATOR CONDITION
Modulation........................... 100%
Modulation frequency.......... 1kHz
Output level......................... 66dB


DC EVM
FM-SG
OUT
UNIT
Choke coil
TP202
TP203
Chassis
100μH
Speaker
75Ω
DISTORTION ANALYSER

## MPX VCO ADJUSTMENT

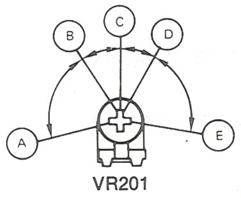
1. Test equipment connection is shown in figure.
2. Set the unit to **"FM auto"** position.
3. Place the radio dial and signal generator setting to **100.10 MHz.**
4. Adjust **VR201** for **38kHz ± 0.05kHz** on frequency counter reading.
5. Modulate the pilot by 8% and make sure that the stereo EYE lights up.

FM SIGNAL GENERATOR CONDITION
Modulation . . . . . . . . . . 0% (non-modulation)
Output level . . . . . . . . . . 66dB


FM ANTENNA TERMINAL
FREQUENCY COUNTER
38.000kHz
FM-SG
OUT
UNIT
TP206
TP204
330kΩ
Chassis
75Ω

### ★ USING ALTERNATE SYSTEM

1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust **VR201** until stereo indicator lights up. Cement arm of **VR201** as shown in figure.



Ⓐ – Ⓑ Ⓓ – Ⓔ : Stereo OFF position
Ⓑ – Ⓓ : Stereo ON position (indicator lighting)
Ⓒ : Adjust point of Pilot circuit

### •CASSETTE

**MEASUREMENT CONDITION:**

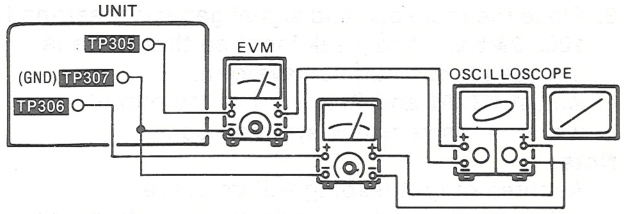
- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Make sure beat-proof switch is "**A**".
- DOLBY NR SW: "**OFF**"

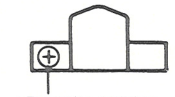
**TEST TAPE:**

- Head azimuth adjustment (8kHz, −20dB): QZZCFM
- Tape speed adjustment (3kHz, −10dB): QZZCWAT
- Normal reference blank: QZZCRA
- $CrO_2$ reference blank: QZZCRX

## HEAD AZIMUTH ADJUSTMENT (DECK A/B)

1. Test equipment connection is shown in figure.
2. Playback the azimuth adjusted part (8kHz, −20dB) of the test tape (QZZCFM) and regulate the angle adjusting screw so that the outputs of L-CH and R-CH are maximized. (When the adjusting positions are different with L-CH and R-CH, find a position where are the outputs of L-CH and R-CH are balanced, and then mark the adjustment.)
3. At the same time, draw a lissajous waveform and eliminate phase deflection.
4. After the adjustment, apply screw-lock to the angle adjusting value.


UNIT
TP305
(GND) TP307
TP306
EVM
OSCILLOSCOPE

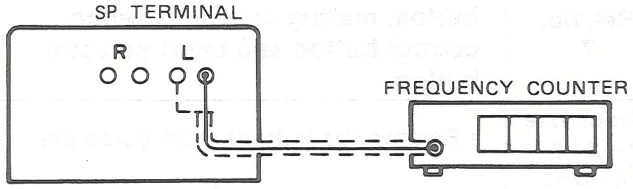


AZIMUTH SCREW

## TAPE SPEED ADJUSTMENT (DECK A/B)

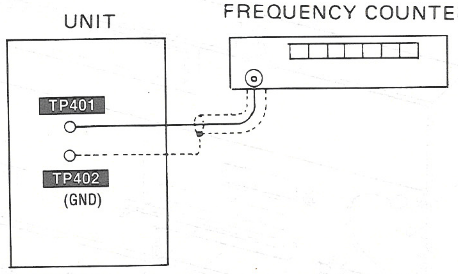
1. Test equipment connection is shown in figure.
2. Place unit into **"TAPE"** position.
3. Playback the middle part of the test tape (QZZCWAT).
4. Adjust the VR in the motor so that the output is within the standard.

**Standard value: 3000 ± 20Hz**


SP TERMINAL
R
L
FREQUENCY COUNTER

## BIAS OSCILLATION ADJUSTMENT (DECK A)

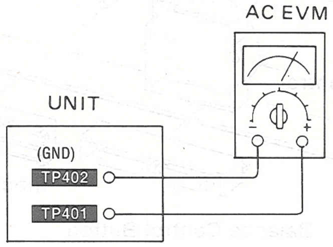
1. Test equipment connection is shown in figure.
2. Place unit into **"TAPE"** position.
3. Place cassette deck into **REC** mode. (QZZCRA)
4. Adjust **L401** for **95~100kHz** on frequency counter reading.


UNIT
FREQUENCY COUNTER
TP401
TP402
(GND)

## ERASE CURRENT ADJUSTMENT (DECK A)

1. Test equipment connection is shown in figure.
2. Place unit into **"TAPE"** position.
3. Place cassette deck into **REC** mode. **(QZZCRA)**
4. Adjust **VR401** for **70±5mV** on AC Electronic Voltmeter. (AC EVM)

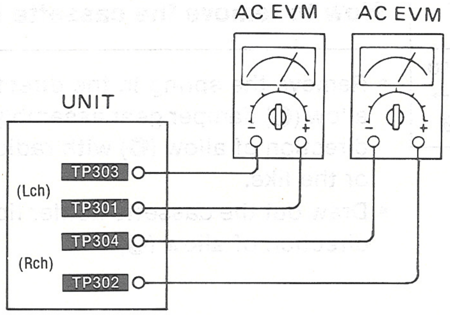
Standard value: Normal tape More than **70±5mV**
$CrO_2$ tape More than **80mV**


AC EVM
UNIT
(GND)
TP402
TP401

## RECORDING BIAS ADJUSTMENT (DECK A)

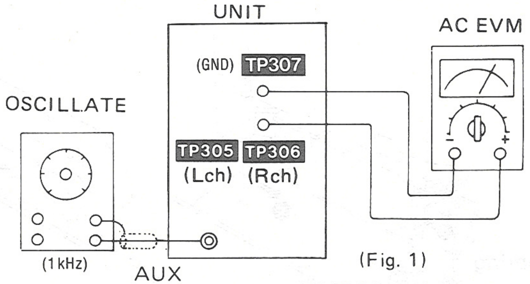
1. Test equipment connection is shown in figure.
2. place unit into **"TAPE"** position.
3. Place cassette deck into **REC** mode. (QZZCRA)
4. Adjust **VR307** (Lch) and **VR308** (Rch) for **4.8±0.1mV** on AC Electronic Voltmeter (AC EVM)

Standard value: Normal tape **4.8±0.1mV**
$CrO_2$ tape **5~8.0mV**

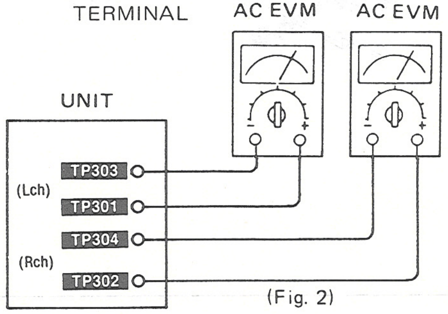

AC EVM
AC EVM
UNIT
TP303
(Lch)
TP301
TP304
(Rch)
TP302

## RECORDING CURRENT ADJUSTMENT (DECK A)

1. Test equipment connection is shown in figure. (Fig.1)
2. Place unit into **"TAPE"** position and cassette deck into **STOP** mode.
3. Short circuitry to **"ERASE HEAD"** and **TP307 (GND).**
4. Place cassette deck into **REC** mode.
5. Supply AF Oscillator signal (1 kHz) into **AUX** terminal and adjust the input level to get **410±10mV** on AC Electronic Voltmeter (AC EVM)
6. Test equipment connection is shown in figure. (Fig. 2)
7. Place cassette deck into **REC** mode. (QZZCRA)
8. Adjust **VR305** (Lch) and **VR306** (Rch) for **0.38±0.01 mV** on AC Electronic Voltmeter (AC EVM)


UNIT
AC EVM
(GND) TP307
OSCILLATE
TP305 TP306
(Lch) (Rch)
(1kHz)
AUX TERMINAL

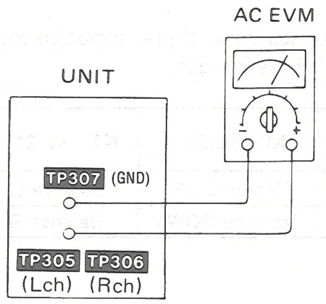
(Fig. 1)


AC EVM
AC EVM
UNIT
TP303
(Lch)
TP301
TP304
(Rch)
TP302

(Fig. 2)

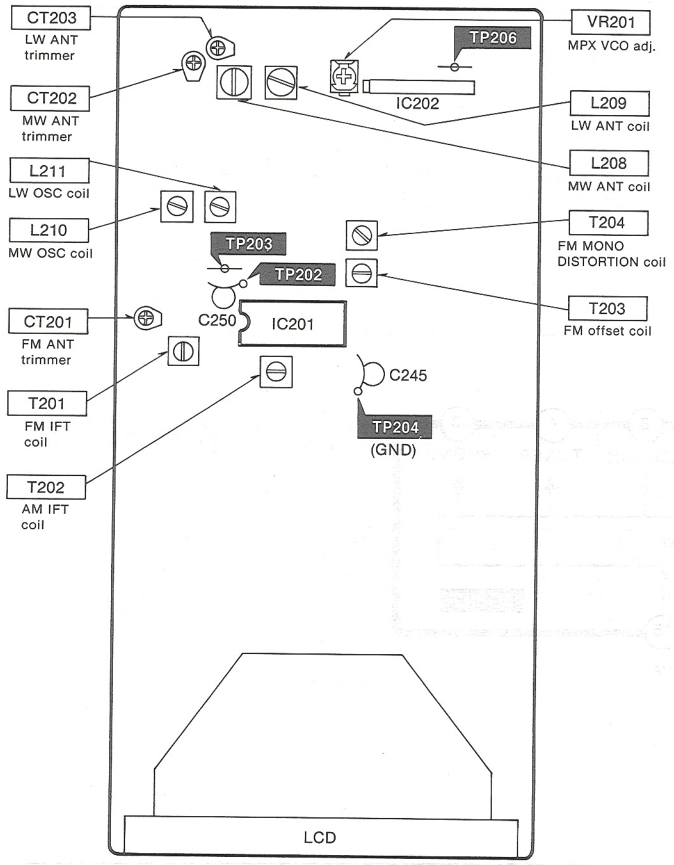
## PLAYBACK GAIN ADJUSTMENT (DECK A/B)

1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCFM** (315Hz)
3. Adjust **VR301, 302** (DECK B) and **VR303, 304** (DECK A) for **410±10mV** on AC Electronic Voltmeter (AC EVM).

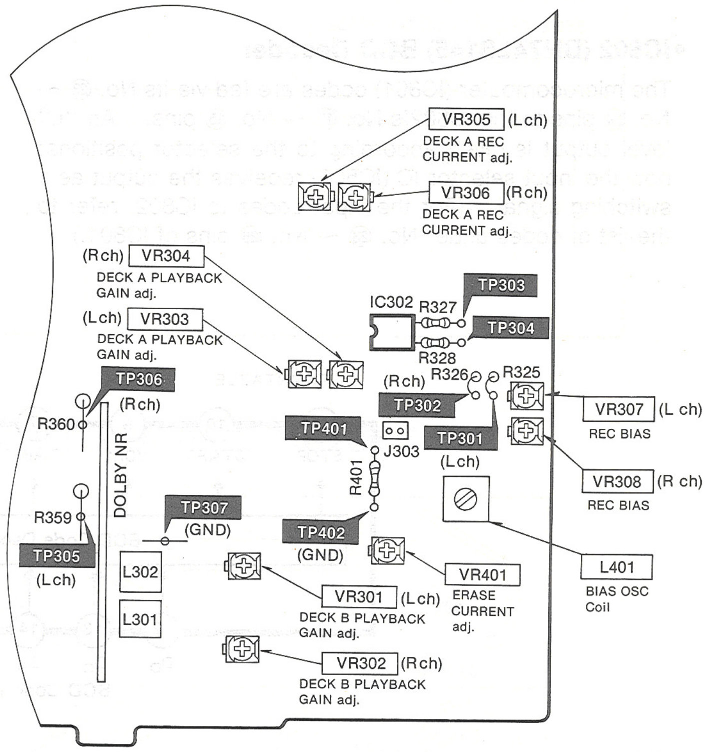

AC EVM
UNIT
TP307 (GND)
TP305 TP306
(Lch) (Rch)

## • Adjustment Points

### • Tuner P.C.B.

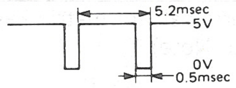
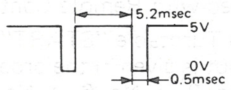
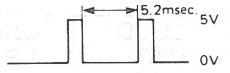

CT203
LW ANT trimmer
CT202
MW ANT trimmer
L211
LW OSC coil
L210
MW OSC coil
CT201
FM ANT trimmer
T201
FM IFT coil
T202
AM IFT coil
TP206
IC202
VR201
MPX VCO adj.
L209
LW ANT coil
L208
MW ANT coil
T204
FM MONO DISTORTION coil
T203
FM offset coil
TP203
TP202
C250
IC201
C245
TP204
(GND)
LCD

### • Main P.C.B.


VR305 (Lch)
DECK A REC CURRENT adj.
VR306 (Rch)
DECK A REC CURRENT adj.
(Rch) VR304
DECK A PLAYBACK GAIN adj.
(Lch) VR303
DECK A PLAYBACK GAIN adj.
IC302
R327
R328
TP303
TP304
R326
R325
(Rch)
TP302
VR307 (L ch)
REC BIAS
VR308 (R ch)
REC BIAS
TP306
(Rch)
R360
DOLBY NR
TP401
J303
TP301
(Lch)
R401
R359
TP305
(Lch)
TP307
(GND)
TP402
(GND)
L302
L301
VR301 (Lch)
DECK B PLAYBACK GAIN adj.
VR401
ERASE CURRENT adj.
L401
BIAS OSC Coil
VR302 (Rch)
DECK B PLAYBACK GAIN adj.

## ■ FUNCTION OF TERMINAL

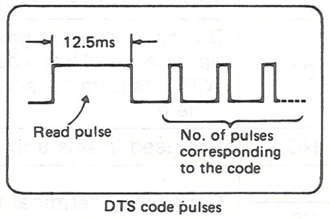
### • IC203 (µPD1718G514) PLL controller

| PIN NO. | IN/OUT | MARK | DESCRIPTION OF TERMINAL |
|---|---|---|---|
| 1<br>~<br>4<br>34<br>~<br>52 | OUTPUT | LCD4<br>~<br>LCD1<br>LCD23<br>~<br>LCD5 | Segment signal output terminal for display. |
| 5 | OUTPUT | COM2 | Common signal output terminal connected to LCD. Output is delivered in 3 values of ground, 1/2$V_{DD}$ and $V_{DD}$ (at 5ms intervals) in a period of 50Hz.<br>The segment turns ON when the difference in voltage is ±$V_{DD}$ between these terminals and LCD1~LCD23. |
| 6 | | COM1 | |
| 7 | INPUT | $V_{DD}$ | Power supply terminal of device. Voltage of 5V±10% is supplied during operation of device.<br>To hold the internal date memory (RAM), the voltage can be decreased to 2.5V.<br>**Note:** Pins 7 and 33 are connected inside the chip. It is unnecessary to supply voltage to the pins. |
| 33 | | $V_{DD}$ | Not used in this unit. |
| 8 | INPUT | FM | Input is local oscillator output (VCO) in a range of 10~130MHz (0.3Vp-p, min.).<br>There are 1/2 fixed frequency division prescaler and 2-step (1/32, 1/33) prescaler internally. Therefore, when deciding the frequency dividing value of programmable divider, it must be decided from the frequency obtained by halving the local oscillator output (VCO). |
| 9 | INPUT | AM | Input is local oscillator output (VCO) in a range of 0.5~20MHz (0.1Vp-p, min.).<br>When the mode is shifted to FM, the AM terminal voltage automatically becomes the supply voltage of device. |
| 10 | —— | GND | Ground terminal. |
| 11 | —— | E01 | Not used in this unit. |
| 12 | OUTPUT | E02 | When the divided oscillator frequency is higher than the standard frequency, H-level output is delivered from these terminals.<br>When it is lower, L-level (0V) output is delivered. When they coincide, it results in floating. |
| 13 | INPUT | CE | Device selection signal input terminal. The signal level should be high when the device is operated, and low when not operated.<br>With this terminal shifted to low level, LCD (liquid crystal display) turns off and the memory is held. |
| 14 | —— | NC | Not used in this unit. |
| 15 | OUTPUT | X1 | Connecting terminal for crystal oscillator. The crystal connected is 4.5MHz. |
| 16 | INPUT | X2 | |
| 17 | INPUT | A3 (SD) | Terminal to put in stop signal during auto tuning. The voltage is 5V with broadcast received, and 0V without broadcast received. |
| 18 | INPUT | A2<br>(REMOTE CONTROL) | This is the interrupt demand signal input terminal. The signal from the control input terminal is put into this terminal, demanding for interruption, then the flow of program will be unconditionally shifted to the address No. 1. |
| 19 | OUTPUT | A1 (FM) | FM/AM output terminal. (FM → 5V, AM → 0V) |
| 20 | OUTPUT | A0<br>(MONO) | Auto/mono changeover output terminal. (auto → 0V, mono → 5V) |
| 21<br>~<br>24 | INPUT | KEY 3<br>~<br>KEY 0 | Input terminal for key return signal from external key matrix.   5.2msec<br>5V<br>0V<br>0.5msec |
| 25<br>~<br>28 | OUTPUT | PB3<br>~<br>PB0 | Output terminal for key return signal to external key matrix.   5.2msec<br>5V<br>0V<br>0.5msec |
| 29 | OUTPUT | PC3 | Terminal for FM IF ceramic filter frequency compensation. A pulse is generated when the voltage of terminal 13 rises. |
| 30 | OUTPUT | PC2 | Output terminal for key return signal to let the stereo indicator light up.   5.2msec<br>5V<br>0V |
| 31 | OUTPUT | PC1 | Not used in this unit. |
| 32 | OUTPUT | PC0 | Muting signal output terminal. Muting signal is delivered during operation of FM/AM selector switch and tuning switch. (4V during muting) |

[KEY MATRIX]

| Pin No. | 25 | 26 | 27 | 28 | 29 |
|---|---|---|---|---|---|
| 21 | UP | MW | CH5/13 | CH1/9 | — |
| 22 | DOWN | LW | CH6/14 | CH2/10 | — |
| 23 | — | FM | CH7/15 | CH3/11 | MEMORY |
| 24 | — | MODE | CH8/16 | CH4/12 | — |

## • IC801 (LC6523C−3068) Microcomputer

| Pin No. | Mark | Description |
|---|---|---|
| ① | LED 4 | "L" level output is given to each pin according to the volume attenuation in order to light up the volume level LED. (See the LED table below.) |
| ③ | LED 5 | |
| ④ | LED 6 | |
| ⑤ | LED 7 | |
| ㉘ | LED 1 | |
| ㉙ | LED 2 | |
| ㉚ | LED 3 | |
| ⑥ | BACK-UP | ● When this pin is at "L" level, the microcomputer is operated by the back-up circuit.(No. ⑲ pin alone receives an input, all the others not.)<br>● When this pin is at "H" level, No.⑨pin (POWER ON) gives an "L" level output if No. ⑫ pin (POWER SW) is at "H" level. No.⑨pin (POWER ON) is at "H" level, however, if the remote control's power on/off RAM data are off. |
| ⑦ | REMOTE | ● Data codes reach here from the remote control receiver. (For data codes, refer to the remote control transmitter description.)<br>● The compact disc player's data codes are outputted from the light receiver direct to the player. |
| ⑧ | AMP | ● When this pin receives an "H" level input, the amplifier turns on to start the operation.<br>● When this pin receives an "L" level input, the amplifier turns off to stop receiving the matrix key. Power on/off code alone is used to enable the remote control.<br>● Just when this pin's input comes from "H" to "L" level, the LED1 ~ LED7 and LOUD pins become "H". |
| ⑨ | POWER ON (NC) | ● A rising level ("H" level) is detected at No. ⑩ pin to give an "L" level output to No.⑨pin (POWER ON). |
| ⑩ | POWER SW | ● When No. ⑩ pin is at "L" level, No.⑨pin is given an "H" level output (POWER OFF). |
| ⑪ | DECK | **Not used in this unit.** |
| ⑫ | ST/DTS | ● When "Tuner" code is fed from the remote control to No.⑦pin, The DTS code is outputted at pin No. ⑫ SELECTOR code is then outputted to make the input selector into TUNER mode.<br>● If the remote control's CH button has been kept depressed for longer than 1.5 seconds, 15 output pulses (AM code) are fed to the tuner and the number of pulses for a specified channel is given.<br>● If the button has been released within 1.5 seconds 13 output pulses (FM code) are fed to the tuner and the number of pulses for a specified channel is given.<br><br>12.5ms<br>Read pulse<br>No. of pulses corresponding to the code<br>DTS code pulses |
| ⑬ | DATA/S1 | Together with No. ⑫ pin, Volume UP/DOWN, Balance L/R and Loudness signals are fed to the attenuator IC. |
| ⑭ | CLK | |
| ⑮ | OSC 2 | Crystal hook-up terminals for internal clock oscillator. |
| ⑯ | OSC 1 | |
| ⑲ | RES | Reset pulse input terminal.<br>When a reset is made by the back-up circuit using electrolytic capacitors alone, 3 or 4 control RAM data are checked by the program. COLD START is activated when abnormal, HOT START when normal. |
| ⑳ | K2 | Input terminals for matrix keys.<br>(Refer to Note) |
| ㉑ | K1 | |
| ㉒ | K0 | |
| ㉓ | $D_A$/SO | Input selector 4-bits BCD codes are outputted with Remote Control codes.<br>* With Turntable "START" code, the output is given in the order of No. 1 → No. 2 → No. 6 → No. 1.<br>No. 8 code:<br>Not provided in this unit's with remote control. |
| ㉔ | $D_B$ | |
| ㉕ | $D_C$ | |
| ㉖ | $D_D$ | |
| ㉗ | LOUD (NC) | Loudness on/off signal output terminal.<br>* By pressing the LOUDNESS key, an "L"level output is given at this pin to turn on the loudness switch. Push the key again, and an "H" level output will come to turn off the loudness switch. |

| −dB \ LED | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Pin No. | ㉘ | ㉙ | ㉚ | ① | ③ | ④ | ⑤ |
| 0~ −4dB | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| −6~−10 | ○ | ○ | ○ | ○ | ○ | ○ | |
| −12~−18 | ○ | ○ | ○ | ○ | ○ | | |
| −20~−26 | ○ | ○ | ○ | ○ | | | |
| −28~−36 | ○ | ○ | ○ | | | | |
| −38~−52 | ○ | ○ | | | | | |
| −54~∞ | ○ | | | | | | |

○ mark
= Light up
= "L" level output

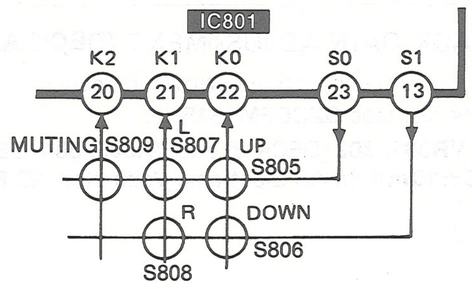
| Function | No. of output pulses |
|---|---|
| CH 1 (CH 9) | 0 |
| CH 2 (CH 10) | 1 |
| CH 3 (CH 11) | 2 |
| CH 4 (CH 12) | 3 |
| CH 5 (CH 13) | 4 |
| CH 6 (CH 14) | 5 |
| CH 7 (CH 15) | 6 |
| CH 8 (CH 16) | 7 |
| FM | 13 |
| AM | 15 |

| No. | Selector | $D_A$ | $D_B$ | $D_C$ | $D_D$ |
|---|---|---|---|---|---|
| 1 | — | L | L | L | H |
| 2 | PHONO | L | L | H | L |
| 3 | TUNER | L | L | H | H |
| 4 | CD/AUX | L | H | L | L |
| 5 | TAPE | L | H | H | L |
| 6 | TURNTABLE START | H | L | L | L |
| 7 | TURNTABLE STOP | H | L | L | H |
| * 8 | VCR2 | L | H | H | H |
| 9 | VCR1 | L | H | L | H |

**Notes:**

**(A) Key matrix, scanning signal input/output pins and their functions ("H" level scan)**

| OUT \ IN | K0 No.22 | K1 No.21 | K2 No.20 |
|---|---|---|---|
| S0 No.23 | *Volume UP | Balance L | Muting |
| S1 No.13 | Volume DOWN | Balance R | —— |



**(B) Volume UP/DOWN**

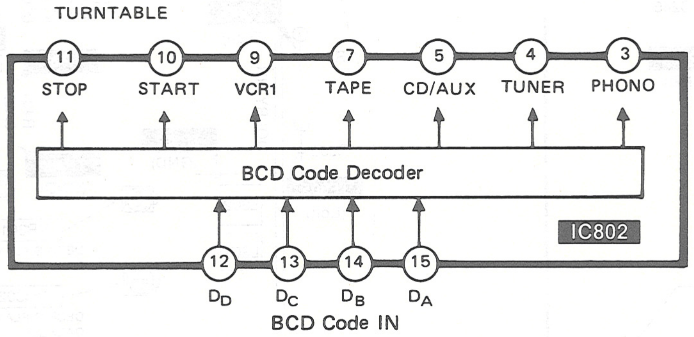
1. Push the key once, and the volume will turn up (or down) by 2dB each steps.
2. Keep the key depressed for more than 250msec, and the volume will turn up (or down) all the way automatically.
3. An "L" level output is given at LED1 ~ LED7 pins according to the volume attenuation.

**(C) Balance LEFT/RIGHT**

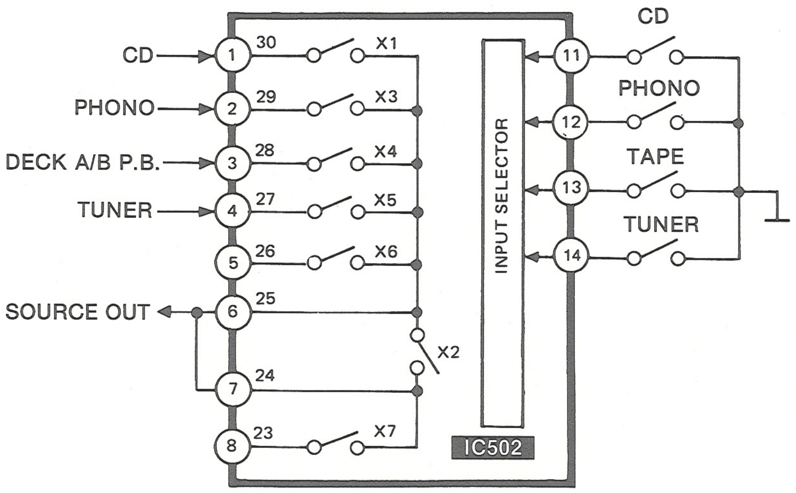
1. Push the key once, and the balance will shift to the left (or right) channel by 2dB. At the same time, the "Volume/Balance" indicator (LED1 ~ LED7) is switched to the Balance position. (The Balance indication goes on for about 4 ~ 6 seconds after the Balance key is released.)
2. Keep the key depressed for more than 500msec, the automatic shift mode will be invited.

## •IC802 (DN74LS145) BCD Decoder

The microcomputer (IC801) codes are fed via its No. ㉓ ~ No. ㉖ pins to the IC802's No. ⑫ ~ No. ⑮ pins. An "L" level output is given according to the selector positions; now the input selector IC (IC502) receives the output as a switching signal. (For the input codes to IC802, refer to the list of codes under No. ㉓ ~ No. ㉖ pins of IC801.)



## • IC502 (LC7818) input Selector



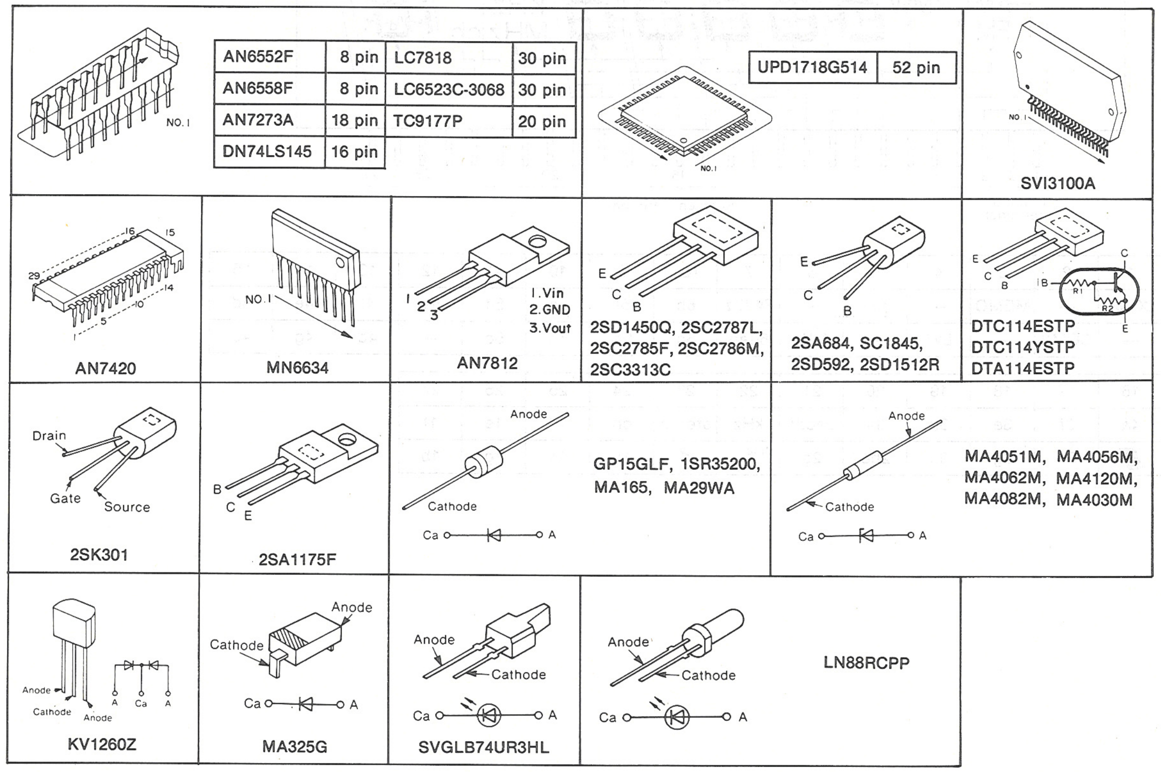
| MODE \ SW | X1 | X2 | X3 | X4 | X5 | X6 | X7 |
|---|---|---|---|---|---|---|---|
| PHONO | — | on | on | — | — | — | — |
| CD | on | on | — | — | — | — | — |
| DECK A/B | — | on | — | on | — | — | — |
| TUNER | — | on | — | — | on | — | — |

### • IC503 (TC9177P) Attenuator

| Pin No. | Mark | Description |
|---|---|---|
| 1 | $V_{SS}$ | Power supply (negative). |
| 2, 3<br>18, 19 | CH1-Loudness 1, 2<br>CH2-Loudness 1, 2 | Loudness terminal. |
| 4<br>17 | CH1-OUT 1<br>CH2-OUT 1 | 10dB attenuator output. Signal via IN is attenuated by 8 steps, 10dB each, from 0 ~ 70dB. |
| 5<br>16 | CH1-IN 1<br>CH2-IN 1 | 10dB attenuator input. |
| 6<br>15 | A-GND | AC grounding terminal. |
| 7<br>14 | CH1-IN 2<br>CH2-IN 2 | 2dB attenuator input. |
| 8<br>13 | CH1-OUT 2<br>CH2-OUT 2 | 2dB attenuator output. Signal via IN is attenuated by 5 steps, 2dB each, from 0 ~ 8dB. |
| 9 | GND | Grounding terminal. |

| Pin No. | Mark | Description |
|---|---|---|
| 10 | CK | Clock input. Used to take in data at DATA pin. |
| 11 | DATA | Attenuation/channel select data input. 20-bits input activated by CK signal. |
| 12 | ST | Strobe input. Attenuation/channel select data from DATA and CK pins are lapped when this pin is at "H" level. Previous data remain the same while this pin does not reach "H" level. |
| 20 | $V_{DD}$ | Power supply (positive). |

## TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



| AN6552F | 8 pin | LC7818 | 30 pin |
|---|---|---|---|
| AN6558F | 8 pin | LC6523C-3068 | 30 pin |
| AN7273A | 18 pin | TC9177P | 20 pin |
| DN74LS145 | 16 pin | | |

| UPD1718G514 | 52 pin |
|---|---|

## RESISTORS AND CAPACITORS

**Notes:** * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

**Numbering System of Resistor**

**Example**

| ERD | 25 | F | J | 102 |
|---|---|---|---|---|
| Type | Wattage | Shape | Tolerance | Value |

| ERX | 2 | AN | J | 471 |
|---|---|---|---|---|
| Type | Wattage | Shape | Tolerance | Value<br>$47 \times 10^1$ (ohm) |

**Numbering System of Capacitor**

**Example**

| ECKD | 1H | 102 | Z | F |
|---|---|---|---|---|
| Type | Voltage | Value | Tolerance | Peculiarity |

| ECEA | 50 | M | 330 |
|---|---|---|---|
| Type | Voltage | Peculiarity | Value<br>($33 \times 10^0$ microfarad) |

| Resistor Type | Wattage | Tolerance |
|---|---|---|
| ERD : Carbon<br>ERG : Metal Oxide<br>ERX : Metal Film<br>ERQ : Fuse Type Metal<br>ERD [ ] L : Carbon (chip)<br>ERO [ ] K : Metal Film (chip)<br>ERC : Solid | 10 : 1/8W<br>12 : 1/2W<br>25 : 1/4W<br>1A : 1W<br>18 : 1/8W<br>S2 : 1/4W<br>S1 : 1/2W<br>2F : 1/4W<br>50 : 1/2W<br>2A : 2W | J : ±5%<br>F : ±1%<br>G : ±2%<br>K : ±10% |

| Capacitor Type | Voltage | Tolerance |
|---|---|---|
| ECE : Electrolytic<br>ECCD : Ceramic<br>ECKD : Ceramic<br>ECQM : Polyester<br>ECQP : Polyproylene<br>ECG : Ceramic<br>ECEA□□□N: Non Polar Electrolytic<br>QCU□ : Ceramic (Chip Type)<br>ECUX : Ceramic (Chip Type)<br>ECF : Semiconductor<br>EECW : Liquid electrolyte double layer capcitor | 0J : 6.3V<br>1A : 10V<br>1C : 16V<br>1E : 25V<br>1H : 50V<br>1V : 35V<br>50 : 50V<br>05 : 50V<br>2H : 500V<br>2A : 100V<br>1 : 100V<br>KC: 400V AC<br>KC: 125VAC (UL)<br>1J : 63V | C : ±0.25pF<br>J : ±5%<br>K : ±10%<br>Z : +80% −20%<br>P : +100% −0%<br>M : ±20%<br>D : ±0.5pF<br>G : ±2% |

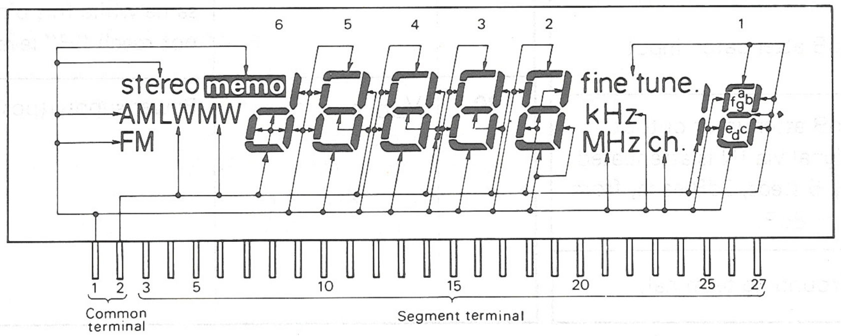
| Ref. No. | Part No. | Part Code |
|---|---|---|
| RESISTORS | | |
| R201 | ERDS2TJ332 | 001 152 2357 1 |
| R202 | ERDS2TJ824 | 001 152 2457 8 |
| R203 | ERDS2TJ332 | 001 152 2357 1 |
| R204 | ERDS2TJ221 | 001 152 2431 8 |
| R205 | ERDS2TJ470 | 001 152 2442 5 |
| R206 | ERDS2TJ824 | 001 152 2457 8 |
| R207 | ERDS2TJ221 | 001 152 2431 8 |
| R208 | ERDS2TJ824 | 001 152 2457 8 |
| R210 | ERDS2TJ333 | 001 152 2358 0 |
| R211 | ERDS2TJ221 | 001 152 2431 8 |
| R212 | ERDS2TJ474 | 001 152 2443 4 |
| R213 | ERDS2TJ102 | 001 152 2346 4 |
| R214 | ERDS2TJ332 | 001 152 2357 1 |
| R215 | ERDS2TJ224 | 001 152 2433 6 |
| R216 | ERDS2TJ222 | 001 152 2353 5 |
| R217 | ERDS2TJ122 | 001 152 2423 8 |
| R220 | ERDS2TJ472 | 001 152 2362 4 |
| R221 | ERDS2TJ222 | 001 152 2353 5 |
| R222 | ERDS2TJ103 | 001 152 2347 3 |
| R223 | ERDS2TJ681 | 001 152 2449 8 |
| R224 | ERDS2TJ122 | 001 152 2423 8 |
| R225 | ERDS2TJ104 | 001 152 2348 2 |
| R226 | ERDS2TJ103 | 001 152 2347 3 |
| R227 | ERDS2TJ472 | 001 152 2362 4 |
| R228 | ERDS2TJ223 | 001 152 2432 7 |
| R229 | ERDS2TJ470 | 001 152 2442 5 |
| R230 | ERDS2TJ102 | 001 152 2346 4 |
| R231 | ERDS2TJ104 | 001 152 2348 2 |
| R232 | ERDS2TJ473 | 001 152 2363 3 |
| R233 | ERDS2TJ822 | 001 152 2455 0 |
| R234 | ERDS2TJ562 | 001 152 2445 2 |
| R235 | ERDS2TJ222 | 001 152 2353 5 |
| R236 | ERDS2TJ103 | 001 152 2347 3 |
| R237 | ERDS2TJ102 | 001 152 2346 4 |
| R238, R239 | ERDS2TJ103 | 001 152 2347 3 |
| R240 | ERDS2TJ103 | 001 152 2347 3 |
| R241 | ERDS2TJ104 | 001 152 2348 2 |
| R242 | ERDS2TJ222 | 001 152 2353 5 |
| R243 | ERDS2TJ681 | 001 152 2449 8 |
| R244 | ERDS2TJ471 | 001 152 2361 5 |
| R245 | ERDS2TJ822 | 001 152 2455 0 |
| R246 | ERDS2TJ222 | 001 152 2353 5 |
| R247 | ERDS2TJ102 | 001 152 2346 4 |
| R248 | ERDS2TJ104 | 001 152 2348 2 |
| R249 | ERDS2TJ224 | 001 152 2433 6 |
| R250 | ERDS2TJ103 | 001 152 2347 3 |
| R251, R252 | ERDS2TJ332 | 001 152 2357 1 |
| R253, R254 | ERDS2TJ104 | 001 152 2348 2 |
| R255 | ERDS2TJ471 | 001 152 2361 5 |
| R256 | ERDS2TJ102 | 001 152 2346 4 |
| R257 | ERDS1FJ6R8 | 001 152 2637 6 |
| R258 | ERDS2TJ102 | 001 152 2346 4 |
| R259 | ERDS2TJ221 | 001 152 2431 8 |
| R260 | ERD25FJ470 | 001 152 0309 7 |
| R261 | ERDS2TJ102 | 001 152 2346 4 |
| R262 | ERDS2TJ103 | 001 152 2347 3 |
| R263 | ERDS2TJ333 | 001 152 2358 0 |
| R264 | ERDS2TJ681 | 001 152 2449 8 |
| R266 | ERDS2TJ271 | 001 152 2435 4 |
| R267, R268 | ERDS2TJ103 | 001 152 2347 3 |
| R269, R270 | ERDS2TJ103 | 001 152 2347 3 |
| R271, R272 | ERDS2TJ103 | 001 152 2347 3 |
| R273, R274 | ERDS2TJ103 | 001 152 2347 3 |
| R275 | ERDS2TJ103 | 001 152 2347 3 |
| R276 | ERDS2TJ104 | 001 152 2348 2 |
| R277 | ERDS2TJ332 | 001 152 2357 1 |
| R278 | ERDS2TJ471 | 001 152 2361 5 |
| R279 | ERDS2TJ472 | 001 152 2362 4 |
| R280 | ERDS2TJ153 | 001 152 2351 7 |
| R281 | ERDS2TJ562 | 001 152 2445 2 |
| R282 | ERDS2TJ104 | 001 152 2348 2 |
| R283 | ERDS2TJ473 | 001 152 2363 3 |
| R284 | ERDS2TJ154 | 001 152 2427 4 |
| R285 | ERDS2TJ104 | 001 152 2348 2 |
| R301, R302 | ERDS2TJ100 | 001 152 2420 1 |
| R303, R304 | ERDS2TJ224 | 001 152 2433 6 |
| R305, R306 | ERDS2TJ121 | 001 152 2349 1 |
| R307, R308 | ERDS2TJ394 | 001 152 2441 6 |
| R309, R310 | ERDS2TJ163 | 001 152 2763 1 |
| R311, R312 | ERDS2TJ332 | 001 152 2357 1 |
| R313, R314 | ERDS2TJ472 | 001 152 2362 4 |
| R315, R316 | ERDS2TJ224 | 001 152 2433 6 |
| R317 | ERDS2TJ472 | 001 152 2362 4 |
| R318, R319 | ERDS2TJ103 | 001 152 2347 3 |
| R320, R321 | ERDS2TJ103 | 001 152 2347 3 |
| R322 | ERDS2TJ103 | 001 152 2347 3 |
| R323, R324 | ERDS2TJ224 | 001 152 2433 6 |
| R325, R326 | ERD25FJ100 | 001 152 0213 4 |
| R327, R328 | ERD25FJ101 | 001 152 0214 3 |
| R329, R330 | ERDS2TJ224 | 001 152 2433 6 |
| R331, R332 | ERDS2TJ121 | 001 152 2349 1 |
| R333, R334 | ERDS2TJ394 | 001 152 2441 6 |
| R335, R336 | ERDS2TJ163 | 001 152 2763 1 |
| R337, R338 | ERDS2TJ332 | 001 152 2357 1 |
| R339, R340 | ERDS2TJ472 | 001 152 2362 4 |
| R341, R342 | ERDS2TJ103 | 001 152 2347 3 |
| R345, R346 | ERDS2TJ103 | 001 152 2347 3 |
| R347, R348 | ERDS2TJ224 | 001 152 2433 6 |
| R349, R350 | ERDS2TJ272 | 001 152 2354 4 |
| R351, R352 | ERDS2TJ273 | 001 152 2436 3 |
| R353, R354 | ERDS2TJ333 | 001 152 2358 0 |
| R355, R356 | ERDS2TJ153 | 001 152 2351 7 |
| R357, R358 | ERDS2TJ103 | 001 152 2347 3 |
| R359, R360 | ERD25FJ332 | 001 152 0287 6 |
| R361, R362 | ERDS2TJ822 | 001 152 2455 0 |
| R363, R364 | ERDS2TJ272 | 001 152 2354 4 |
| R367, R368 | ERDS2TJ102 | 001 152 2346 4 |
| R369, R370 | ERDS2TJ122 | 001 152 2423 8 |
| R371, R372 | ERDS2TJ822 | 001 152 2455 0 |
| R373, R374 | ERDS2TJ101 | 001 152 2421 0 |
| R375, R376 | ERDS2TJ102 | 001 152 2346 4 |
| R377, R378 | ERDS2TJ392 | 001 152 2439 0 |
| R381, R382 | ERDS2TJ123 | 001 152 2424 7 |
| R383, R384 | ERDS2TJ102 | 001 152 2346 4 |
| R385, R386 | ERDS2TJ472 | 001 152 2362 4 |
| R387 | ERDS2TJ561 | 001 152 2364 2 |
| R389 | ERDS2TJ472 | 001 152 2362 4 |
| R397, R398 | ERDS2TJ272 | 001 152 2354 4 |
| R401 | ERD25FJ1R0 | 001 152 0208 1 |
| R402 | ERDS2TJ221 | 001 152 2431 8 |
| R403 | ERDS2TJ470 | 001 152 2442 5 |
| R404, R405 | ERDS2TJ102 | 001 152 2346 4 |
| R406, R407 | ERD25FJ4R7 | 001 152 0303 3 |
| R408, R409 | ERDS2TJ183 | 001 152 2429 2 |
| R410 | ERDS2TJ152 | 001 152 2350 8 |
| R411 | ERD2FCG100 | 001 152 0185 1 |
| R412 | ERDS2TJ182 | 001 152 2352 6 |

| Ref. No. | Part No. | Part Code |
|---|---|---|
| R416, R417 | ERDS2TJ103 | 001 152 2347 3 |
| R418 | ERDS2TJ682 | 001 152 2365 1 |
| R419 | ERD25FJ181 | 001 152 0247 4 |
| R421 | ERDS2TJ103 | 001 152 2347 3 |
| R422 | ERDS2TJ223 | 001 152 2432 7 |
| R423 | ERDS2TJ472 | 001 152 2362 4 |
| R424 | ERDS2TJ103 | 001 152 2347 3 |
| R426 | ERDS2TJ473 | 001 152 2363 3 |
| R427, R428 | ERDS2TJ332 | 001 152 2357 1 |
| R429 | ERDS2TJ224 | 001 152 2433 6 |
| R430 | ERDS2TJ222 | 001 152 2353 5 |
| R431 | ERDS2TJ221 | 001 152 2431 8 |
| R432 | ERDS2TJ104 | 001 152 2348 2 |
| R433, R434 | ERDS2TJ103 | 001 152 2347 3 |
| R437 | ERDS2TJ333 | 001 152 2358 0 |
| R438, R439 | ERDS2TJ103 | 001 152 2347 3 |
| R440, R441 | ERDS2TJ222 | 001 152 2353 5 |
| R442, R443 | ERDS2TJ103 | 001 152 2347 3 |
| R444 | ERDS2TJ103 | 001 152 2347 3 |
| R501, R502 | ERDS2TJ223 | 001 152 2432 7 |
| R503, R504 | ERDS2TJ103 | 001 152 2347 3 |
| R505, R506 | ERDS2TJ391 | 001 152 2360 6 |
| R507, R508 | ERDS2TJ224 | 001 152 2433 6 |
| R509, R510 | ERDS2TJ563 | 001 152 2446 1 |
| R511, R512 | ERDS2TJ271 | 001 152 2435 4 |
| R513, R514 | ERDS2TJ680 | 001 152 2448 9 |
| R515, R516 | ERDS2TJ154 | 001 152 2427 4 |
| R517, R518 | ERDS2TJ123 | 001 152 2424 7 |
| R521, R522 | ERDS2TJ103 | 001 152 2347 3 |
| R523, R524 | ERDS2TJ822 | 001 152 2455 0 |
| R529, R530 | ERDS2TJ102 | 001 152 2346 4 |
| R531 | ERDS2TJ103 | 001 152 2347 3 |
| R532, R533 | ERDS2TJ224 | 001 152 2433 6 |
| R534 | ERDS2TJ103 | 001 152 2347 3 |
| R535 | ERDS2TJ223 | 001 152 2432 7 |
| R537, R538 | ERDS2TJ224 | 001 152 2433 6 |
| R539 | ERDS2TJ103 | 001 152 2347 3 |
| R540 | ERDS2TJ332 | 001 152 2357 1 |
| R543, R544 | ERDS2TJ104 | 001 152 2348 2 |
| R547, R548 | ERDS2TJ822 | 001 152 2455 0 |
| R549, R550 | ERDS2TJ102 | 001 152 2346 4 |
| R551, R552 | ERDS2TJ224 | 001 152 2433 6 |
| R553, R554 | ERDS2TJ472 | 001 152 2362 4 |
| R555, R556 | ERDS2TJ103 | 001 152 2347 3 |
| R557, R558 | ERDS2TJ102 | 001 152 2346 4 |
| R559, R560 | ERDS2TJ332 | 001 152 2357 1 |
| R561, R562 | ERDS2TJ471 | 001 152 2361 5 |
| R563, R564 | ERDS2TJ104 | 001 152 2348 2 |
| R565 | ERDS2TJ223 | 001 152 2432 7 |
| R566 | ERDS2TJ102 | 001 152 2346 4 |
| R567 | ERDS2TJ154 | 001 152 2427 4 |
| R568 | ERDS2TJ823 | 001 152 2456 9 |
| R569 | ERDS2TJ102 | 001 152 2346 4 |
| R570 | ERDS2TJ223 | 001 152 2432 7 |
| R571, R572 | ERDS2TJ102 | 001 152 2346 4 |
| R573, R574 | ERDS2TJ224 | 001 152 2433 6 |
| R575, R576 | ERDS2TJ224 | 001 152 2433 6 |
| R577, R578 | ERDS2TJ223 | 001 152 2432 7 |
| R579, R580 | ERDS2TJ392 | 001 152 2439 0 |
| R581, R582 | ERDS2TJ223 | 001 152 2432 7 |
| R583, R584 | ERDS2TJ222 | 001 152 2353 5 |
| R585, R586 | ERDS2TJ102 | 001 152 2346 4 |
| R587, R588 | ERDS2TJ224 | 001 152 2433 6 |
| R603, R604 | ERDS2TJ102 | 001 152 2346 4 |
| R605, R606 | ERDS2TJ393 | 001 152 2440 7 |
| R607, R608 | ERDS2TJ152 | 001 152 2350 8 |
| R609, R610 | ERDS2TJ393 | 001 152 2440 7 |
| R611, R612 | ERDS1FJ100 | 001 152 2612 5 |
| R613 | ERDS2TJ154 | 001 152 2427 4 |
| R615, R616 | ERDS1FJ221 | 001 152 2513 7 |
| R621 | ERDS2TJ154 | 001 152 2427 4 |
| R622 | ERDS2TJ103 | 001 152 2347 3 |
| R701 | ERD2FCG121 | 001 152 0187 9 |
| R702 | ERDS2TJ332 | 001 152 2357 1 |
| R703 | ERDS2TJ102 | 001 152 2346 4 |
| R704 | ERDS1FJ331 | 001 152 2514 6 |
| R705 | ERDS1FJ1R0 | 001 152 2754 2 |
| R706 | ERDS2TJ332 | 001 152 2357 1 |
| R801, R802 | ERDS2TJ391 | 001 152 2360 6 |
| R803 | ERDS2TJ102 | 001 152 2346 4 |
| R805 | ERDS2TJ333 | 001 152 2358 0 |
| R806 | ERDS2TJ473 | 001 152 2363 3 |
| R807 | ERDS2TJ222 | 001 152 2353 5 |
| R808 | ERDS2TJ103 | 001 152 2347 3 |
| R809, R810 | ERDS2TJ182 | 001 152 2352 6 |
| R811, R812 | ERDS2TJ182 | 001 152 2352 6 |
| R813, R814 | ERDS2TJ122 | 001 152 2423 8 |
| R815, R816 | ERDS2TJ122 | 001 152 2423 8 |
| R817 | ERDS2TJ563 | 001 152 2446 1 |
| R818 | ERDS2TJ103 | 001 152 2347 3 |
| R819, R820 | ERDS2TJ223 | 001 152 2432 7 |
| R821 | ERDS2TJ392 | 001 152 2439 0 |
| R826 | ERDS2TJ272 | 001 152 2354 4 |
| R827 | ERD2FCG100 | 001 152 0185 1 |
| R828 | ERDS2TJ102 | 001 152 2346 4 |
| R829 | ERDS2TJ564 | 001 152 2447 0 |
| R830 | ERDS2TJ471 | 001 152 2361 5 |
| CAPACITORS | | |
| C201 | ECCD1H680K | 001 103 0682 4 |
| C202 | ECCD1H560K | 001 103 0660 0 |
| C203 | ECCD1H100KC | 001 103 0321 6 |
| C204, C205 | ECKD1H102PF | 001 103 1435 3 |
| C206 | ECKD1H102PF | 001 103 1435 3 |
| C207 | ECFTD102KXL | 001 108 0371 1 |
| C208 | ECCD1H1R5CC | 001 103 0302 9 |
| C209 | ECCD1H100KC | 001 103 0321 6 |
| C210 | ECKD1H181KB | 001 103 1473 7 |
| C211, C212 | ECKD1H103ZF5 | |
| C213, C214 | ECKD1H103ZF5 | |
| C215 | ECFTD103KXL | 001 108 0341 7 |
| C216 | ECCD1H060CC | 001 103 0264 8 |
| C217 | ECKD1H102PF | 001 103 1435 3 |
| C218 | ECCD1H010CC | 001 103 0215 7 |
| C219 | ECCD1H080CC | 001 103 0284 4 |
| C220 | ECCD1H220KC | 001 103 0494 6 |
| C221 | ECCD1H060CC | 001 103 0264 8 |
| C222 | ECCD1H050CC | 001 103 0251 3 |
| C223 ⚠ | ECKD1H223PF | 001 103 1510 9 |
| C224 | ECKD1H102PF | 001 103 1435 3 |
| C225 | ECCD1H030CC | 001 103 0230 8 |
| C226 | ECEA1HU010 | 001 120 2842 1 |
| C230 | ECFTD473KXL | 001 108 0361 3 |
| C231 | ECCD1H100KC | 001 103 0321 6 |
| C232 | ECCD1H180KC | 001 103 0448 2 |
| C233 | ECQP1471JZ | 001 106 1107 1 |
| C234 | ECQP1391JZ | 001 106 1101 7 |
| C235 | ECKD1H103ZF5 | |
| C236 | ECFTD103KXL | 001 108 0341 7 |
| C237 ⚠ | ECKD1H223PF | 001 103 1510 9 |
| C238 | ECEA50M1 | 001 120 1111 3 |
| C239, C240 | ECKD1H103ZF5 | |
| C241 | ECCD1H060CC | 001 103 0264 8 |
| C242 | ECCD1H470K | 001 103 0627 1 |
| C243 | ECEA0JU101 | 001 120 2829 8 |
| C244 | ECEA1HU3R3 | 001 120 3254 1 |
| C245 | ECFTD223KXL | 001 108 0342 6 |
| C246 | ECFTD183KXL | 001 108 0358 8 |
| C247 | ECFTD223KXL | 001 108 0342 6 |
| C248 ⚠ | ECKD1H223PF | 001 103 1510 9 |
| C249 | ECEA1HUR47 | 001 120 3249 8 |
| C250 | ECKD1H103ZF5 | |
| C251 | ECCD1H100KC | 001 103 0321 6 |
| C252 | ECEA1CU100 | 001 120 2905 3 |
| C253, C254 | ECKD1H103ZF5 | |
| C255, C256 | ECEA1VU4R7 | 001 120 3275 6 |
| C257 | ECEA1HU010 | 001 120 2842 1 |
| C258 | ECEA0JS221 | 001 120 2925 9 |
| C259 | ECQP1102JZ | 001 106 1069 0 |
| C260 | ECEA1HU3R3 | 001 120 3254 1 |
| C261, C262 | ECFTD153KXL | 001 108 0356 0 |
| C263, C264 | ECEA1VU4R7 | 001 120 3275 6 |
| C265 | ECEA1CU100 | 001 120 2905 3 |
| C266 | ECEA1HUR47 | 001 120 3249 8 |
| C267 | ECCD1H150KC | 001 103 0410 6 |
| C268 | ECKD1H102PF | 001 103 1435 3 |
| C269 | ECEA0JU332 | 001 120 4671 4 |
| C270 | ECEA0JS331 | 001 120 2975 9 |
| C271 | ECCD1H470K | 001 103 0627 1 |
| C272 | ECCD1H100KC | 001 103 0321 6 |
| C273 | ECKD1H101KB | 001 103 1412 0 |
| C274 | ECFTD104KXL | 001 108 0793 3 |
| C275 | ECEA1HU3R3 | 001 120 3254 1 |
| C276 | ECFTD473KXL | 001 108 0361 3 |
| C277 | ECKD1H103ZF5 | |
| C278 | ECKD1H102PF | 001 103 1435 3 |
| C279 | ECKF1H102ZF | |
| C280 | ECFTD103KXL | 001 108 0341 7 |
| C301, C302 | ECKD1H561KB | 001 103 1576 1 |
| C303, C304 | ECEA0JU470 | 001 120 3125 9 |
| C305, C306 | ECKD1H331KB | 001 103 1523 4 |
| C307, C308 | ECQB1H822JZ | 001 106 3383 5 |
| C309, C310 | ECEA1HU010 | 001 120 2842 1 |
| C311, C312 | ECQB1H153JZ | 001 106 2817 4 |
| C313, C314 | ECKD1H103ZF5 | |
| C315, C316 | ECCD1H020CC | 001 103 0221 9 |
| C317, C318 | ECEA1HU010 | 001 120 2842 1 |
| C319, C320 | ECKD1H103ZF5 | |
| C321, C322 | ECKD1H561KB | 001 103 1576 1 |
| C323, C324 | ECEA0JU470 | 001 120 3125 9 |
| C325, C326 | ECQB1H822JZ | 001 106 3383 5 |
| C327, C328 | ECKD1H103ZF5 | |
| C329, C330 | ECEA1HU010 | 001 120 2842 1 |
| C331, C332 | ECQB1H153JZ | 001 106 2817 4 |
| C333, C334 | ECEA1HU010 | 001 120 2842 1 |
| C335, C336 | ECEA1HUR47 | 001 120 3249 8 |
| C337, C338 | ECKD1H103ZF5 | |
| C339, C340 | ECQB1H273JZ | 001 106 3393 3 |
| C341, C342 | ECQB1H103JZ | 001 106 3225 8 |
| C343, C344 | ECCD1H560K | 001 103 0660 0 |
| C346 | ECEA0JU470 | 001 120 3125 9 |
| C347, C348 | ECKD1H331KB | 001 103 1523 4 |
| C353 | ECEA0JU470 | 001 120 3125 9 |
| C354, C355 | ECKD1H681K | 001 103 1580 5 |
| C401 | ECQP1822FZ | 001 106 1116 0 |
| C402 | ECQP1122JZ | 001 106 1072 5 |
| C403 | ECQP1222JZ | 001 106 2114 8 |
| C404, C405 | ECQV1H104JZ | 001 106 2571 7 |
| C406 | ECQB1H153JZ | 001 106 2817 4 |
| C407 | ECQB1H682JZ | 001 106 3382 6 |
| C408, C409 | ECQB1H332JZ | 001 106 3316 6 |
| C410 | ECEA1HU010 | 001 120 2842 1 |
| C412 | ECEA1CU470 | 001 120 2835 0 |
| C413 | ECEA1HUR47 | 001 120 3249 8 |
| C414, C415 | ECEA1CU470 | 001 120 2835 0 |
| C416 | ECEA1CU470 | 001 120 2835 0 |
| C417 | ECEA0JU470 | 001 120 3125 9 |
| C420 | ECEA1CU101 | 001 120 2926 8 |
| C501, C502 | ECEA1HU3R3 | 001 120 3254 1 |
| C503, C504 | ECKD1H101KB | 001 103 1412 0 |
| C505, C506 | ECKD1H471KB5 | |
| C507, C508 | ECEA0JU330 | 001 120 3162 4 |
| C509, C510 | ECFTD223KXL | 001 108 0342 6 |
| C511, C512 | ECFTD682KXL | 001 108 0363 1 |
| C513, C514 | ECEA1HU010 | 001 120 2842 1 |
| C515, C516 | ECKD1H103ZF5 | |
| C517 | ECEA1CU101 | 001 120 2926 8 |
| C518 | ECFTD473KXL | 001 108 0361 3 |
| C519 | ECEA1CU100 | 001 120 2905 3 |
| C521, C522 | ECEA1HU010 | 001 120 2842 1 |
| C523, C524 | ECEA1CU470 | 001 120 2835 0 |
| C526 | ECKD1H103ZF5 | |
| C527, C528 | ECFTD473KXL | 001 108 0361 3 |
| C529 | ECKD1H103ZF5 | |
| C530 | ECEA1VU4R7 | 001 120 3275 6 |
| C531 | ECEA1HN0101S | 001 120 0354 0 |
| C532 | ECKD1H103ZF5 | |
| C533, C534 | ECEA1HU010 | 001 120 2842 1 |
| C535, C536 | ECKD1H331KB | 001 103 1523 4 |
| C537, C538 | ECEA1HU010 | 001 120 2842 1 |
| C539, C540 | ECKD1H103ZF5 | |

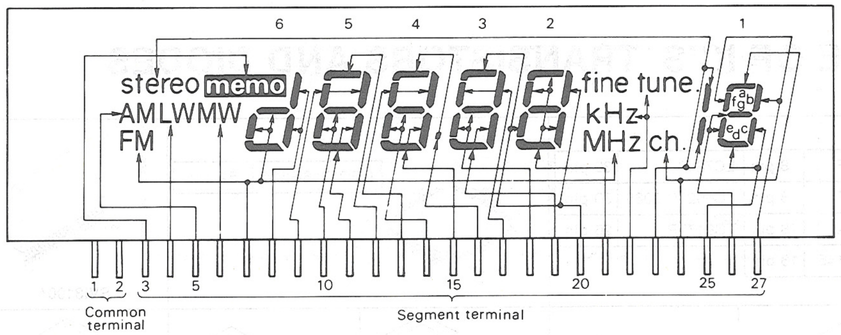
| Ref. No. | Part No. | Part Code |
|---|---|---|
| C541, C542 | ECEA1HU3R3 | 001 120 3254 1 |
| C543, C544 | ECKD1H103ZF5 | |
| C545, C546 | ECKD1H101KB | 001 103 1412 0 |
| C547, C548 | ECKD1H101KB | 001 103 1412 0 |
| C549, C550 | ECEA1HU010 | 001 120 2842 1 |
| C551, C552 | ECEA1HU010 | 001 120 2842 1 |
| C553, C554 | ECFTD183KXL | 001 108 0358 8 |
| C555, C556 | ECFTD104KXL | 001 108 0793 3 |
| C557, C558 | ECFTD332KXL | 001 108 0344 4 |
| C559, C560 | ECFTD223KXL | 001 108 0342 6 |
| C561 | ECEA1CU101 | 001 120 2926 8 |
| C601, C602 | ECEA1HU3R3 | 001 120 3254 1 |
| C603, C604 | ECKD1H821KB | 001 103 1596 7 |
| C605, C606 | ECFTD102KXL | 001 108 0371 1 |
| C607, C608 | ECEA1CU100 | 001 120 2905 3 |
| C609, C610 | ECCD1H150KC | 001 103 0410 6 |
| C611, C612 | ECFTD473KXL | 001 108 0361 3 |
| C613 | ECEA1HS330 | 001 120 0383 5 |
| C614, C615 | ECFTD473KXL | 001 108 0361 3 |
| C616 | ECFTD473KXL | 001 108 0361 3 |
| C701 | ECQM1104KZW | 001 106 2113 9 |
| C702, C703 | ECEA1VU332 | 001 120 2945 5 |
| C705, C706 | ECEA1CU101 | 001 120 2926 8 |
| C707, C708 | ECKD1H103ZF5 | |
| C709, C710 | ECKD1H103ZF5 | |
| C711 | ECEA25V2200 | 001 120 3126 8 |
| C712 | ECEA1CU101 | 001 120 2926 8 |
| C713 | ECEA1CU471 | 001 120 3202 3 |
| C714 | ECKWNS103ZVS | 001 103 9317 6 |
| C801, C802 | ECKD1H103ZF5 | |
| C803 | ECKD1H181KB | 001 103 1473 7 |
| C804 | ECCD1H820K | 001 103 0703 6 |
| C807 | ECEA1CU101 | 001 120 2926 8 |
| C810 | ECEA1HKR22 | 001 120 0336 2 |
| C811 | ECCD1H680K | 001 103 0682 4 |
| C814 | ECEA1HK010 | 001 120 0341 5 |
| C815 | ECKD1H101KB | 001 103 1412 0 |
| C816, C820 | ECKD1H103ZF5 | |
| C821 | ECEA1CU100 | 001 120 2905 3 |
| C822 | ECFTD472KXL | 001 108 0746 0 |

## DESCRIPTION OF LCD PANEL

**• COMMON**



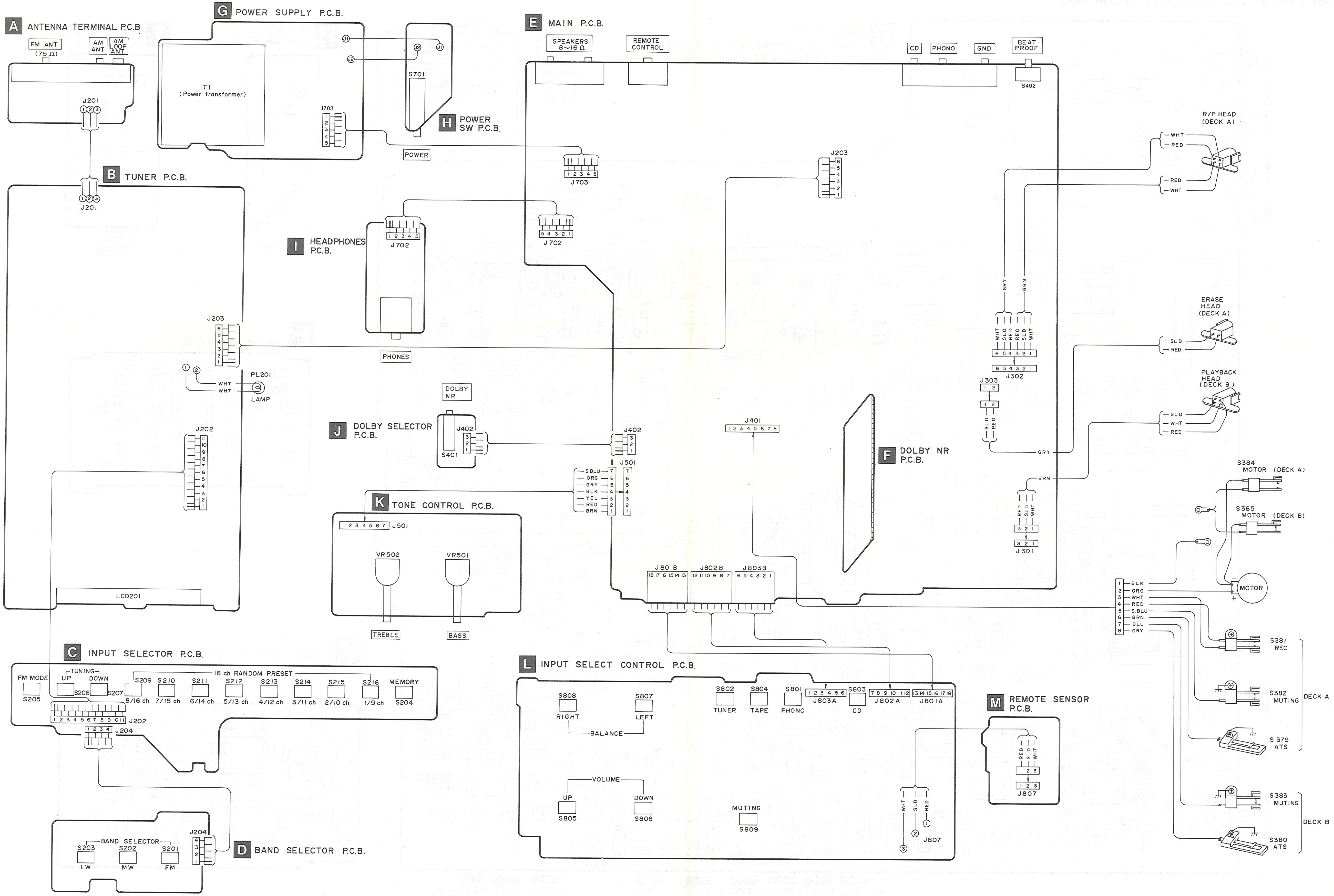
**• SEGMENT**



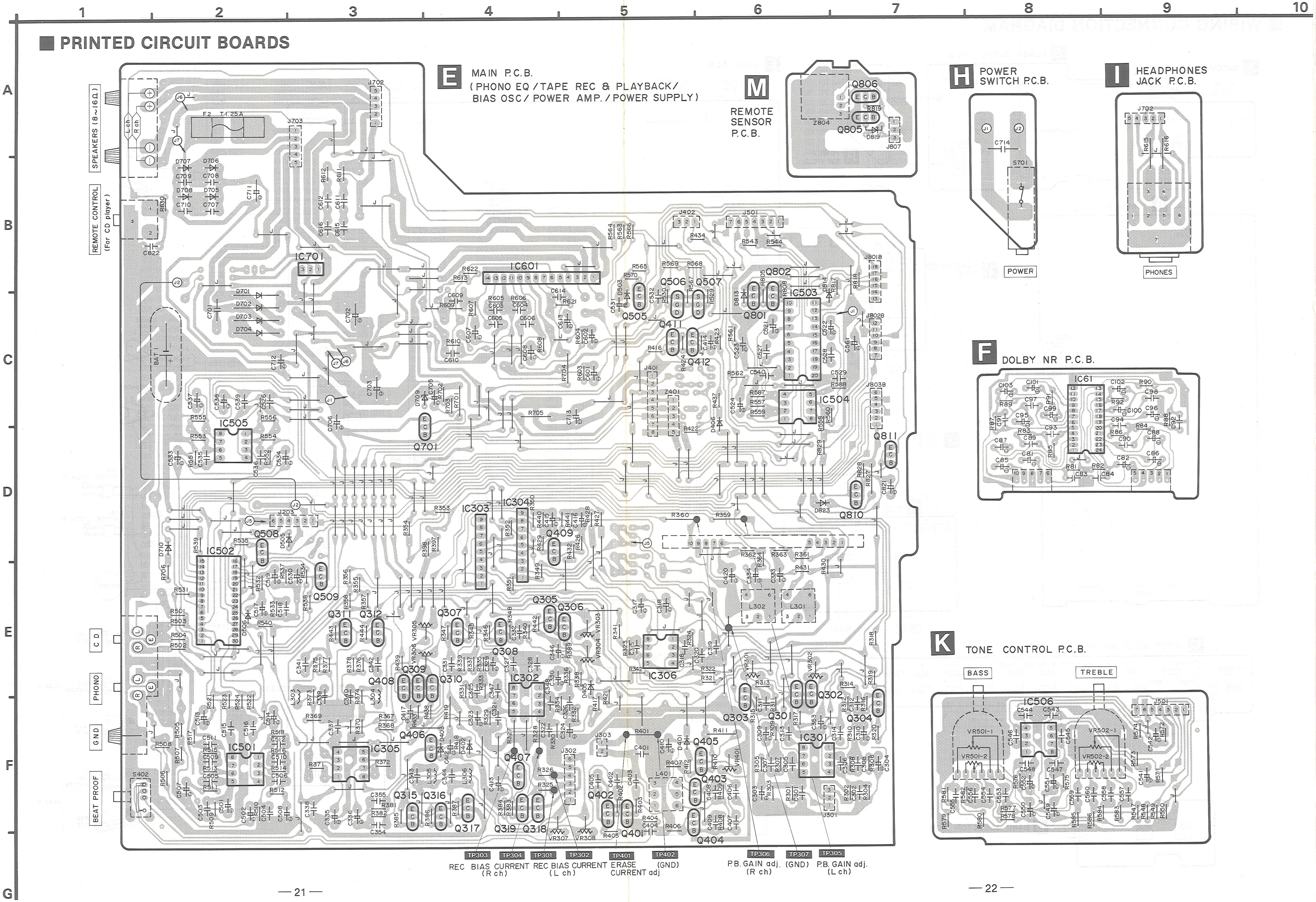
| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 18 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COM1 | COM1 | — | MEMO | — | AM | — | FM, MHz | 6b | 5f | 5e | 5d | 5a | 4f | 4e | 4d |
| COM2 | — | COM2 | — | LW | — | MW | 6deg | 6c | 5b | 5g | 5c | — | 4b | 4g | 4c |

| No. | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COM1 | 4a | 3f | 3e | 3d | 3a | 2acdf | kHz | stereo | ch | 1d | 1e | 1f |
| COM2 | ▰ | 3b | 3g | 3c | 2be | 2g | fine tune | ▰▰ | 1a | 1c | 1g | 1b |

# WIRING CONNECTION DIAGRAM

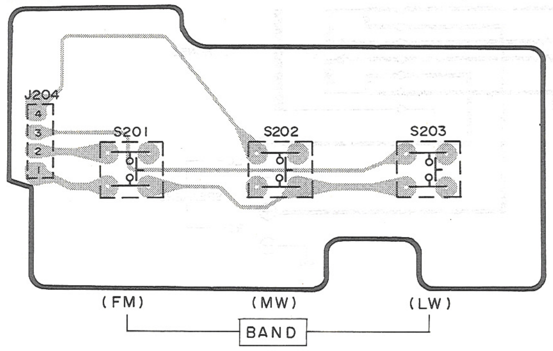

A ANTENNA TERMINAL P.C.B
FM ANT (75 Ω)
AM ANT
AM LOOP ANT
J201
G POWER SUPPLY P.C.B.
T1 (Power transformer)
J703
S701
H POWER SW P.C.B.
POWER
E MAIN P.C.B.
SPEAKERS 8~16 Ω
REMOTE CONTROL
CD
PHONO
GND
BEAT PROOF
S402
J703
J203
J702
B TUNER P.C.B.
J201
J203
PL201
WHT
WHT
LAMP
J202
LCD201
I HEADPHONES P.C.B.
J702
PHONES
J DOLBY SELECTOR P.C.B.
DOLBY NR
J402
S401
J402
J501
S.BLU
ORG
GRY
BLK
YEL
RED
BRN
K TONE CONTROL P.C.B.
J501
VR502
VR501
TREBLE
BASS
J401
F DOLBY NR P.C.B.
J801B
J802B
J803B
R/P HEAD (DECK A)
WHT
RED
RED
WHT
GRY
BRN
WHT SLD RED RED SLD WHT
J302
J303
SLD RED
ERASE HEAD (DECK A)
SLD
RED
PLAYBACK HEAD (DECK B)
SLD
WHT
RED
GRY
BRN
RED SLD WHT
J301
S384 MOTOR (DECK A)
S385 MOTOR (DECK B)
MOTOR
BLK
ORG
WHT
RED
S.BLU
BRN
BLU
GRY
S381 REC
S382 MUTING
DECK A
S 379 ATS
S383 MUTING
DECK B
S380 ATS
C INPUT SELECTOR P.C.B.
FM MODE
S205
TUNING
UP
DOWN
S206
S207
16 ch RANDOM PRESET
S209 8/16 ch
S210 7/15 ch
S211 6/14 ch
S212 5/13 ch
S213 4/12 ch
S214 3/11 ch
S215 2/10 ch
S216 1/9 ch
MEMORY
S204
J202
J204
D BAND SELECTOR P.C.B.
BAND SELECTOR
S203 LW
S202 MW
S201 FM
J204
L INPUT SELECT CONTROL P.C.B.
S808 RIGHT
S807 LEFT
BALANCE
S802 TUNER
S804 TAPE
S801 PHONO
S803 CD
J803A
J802A
J801A
VOLUME
UP S805
DOWN S806
MUTING S809
WHT SLD RED
J807
M REMOTE SENSOR P.C.B.
RED SLD WHT
J807

## PRINTED CIRCUIT BOARDS

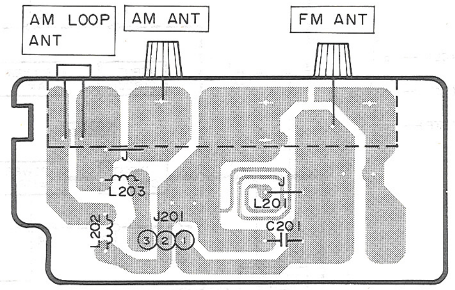


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
E
MAIN P.C.B.
(PHONO EQ / TAPE REC & PLAYBACK / BIAS OSC / POWER AMP. / POWER SUPPLY)
M
REMOTE SENSOR P.C.B.
H
POWER SWITCH P.C.B.
I
HEADPHONES JACK P.C.B.
F
DOLBY NR P.C.B.
K
TONE CONTROL P.C.B.
SPEAKERS (8~16Ω)
L ch
R ch
REMOTE CONTROL (For CD player)
CD
PHONO
GND
BEAT PROOF
F2 T1.25A
BAT1
IC701
IC601
IC505
IC502
IC501
IC303
IC304
IC305
IC302
IC306
IC301
IC503
IC504
IC61
IC506
Q806
Q805
Z804
J807
S701
J702
J703
J402
J501
J401
Z401
L401
L302
L301
Q505
Q506
Q507
Q411
Q412
Q801
Q802
Q701
Q811
Q810
Q508
Q509
Q311
Q312
Q307
Q305
Q306
Q308
Q309
Q310
Q408
Q409
Q406
Q407
Q315
Q316
Q317
Q319
Q318
Q402
Q401
Q403
Q404
Q405
Q303
Q301
Q302
Q304
VR301
VR302
VR303
VR304
VR305
VR306
VR307
VR308
VR401
VR501-1
VR501-2
VR502-1
VR502-2
POWER
PHONES
BASS
TREBLE
TP303
TP304
TP301
TP302
TP401
TP402
TP306
TP307
TP305
REC BIAS CURRENT (R ch)
REC BIAS CURRENT (L ch)
ERASE CURRENT adj
(GND)
P.B. GAIN adj. (R ch)
(GND)
P.B. GAIN adj. (L ch)

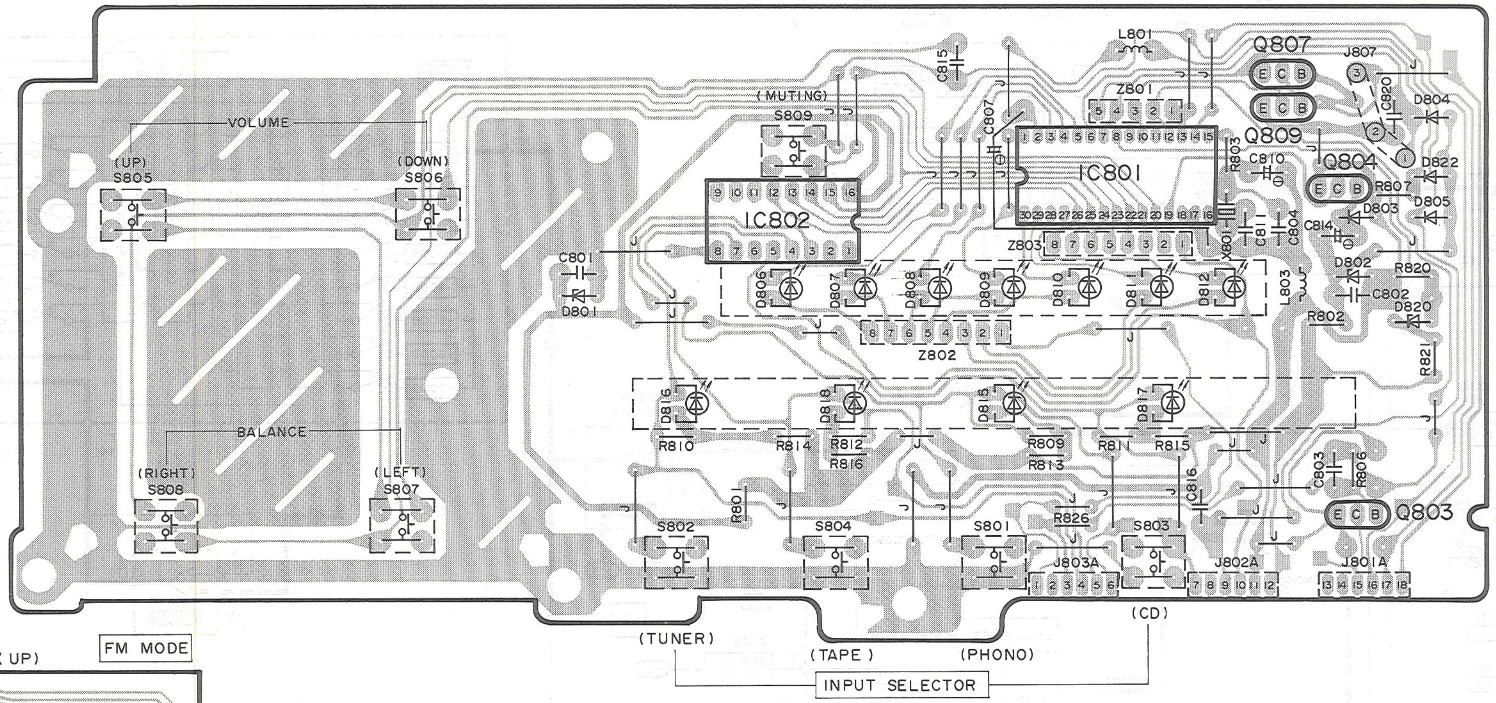
## D BAND SELECTOR P.C.B.


J204
S201
S202
S203
(FM)
(MW)
(LW)
BAND

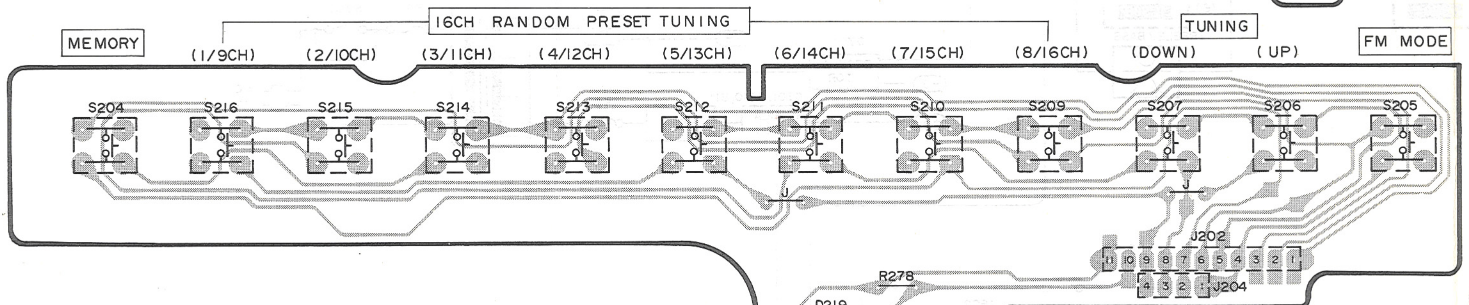
## A ANTENNA TERMINAL P.C.B.


AM LOOP ANT
AM ANT
FM ANT
L203
L202
J201
L201
C201

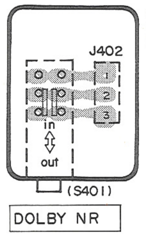
## L INPUT SELECT CONTROL P.C.B.


VOLUME
(UP)
S805
(DOWN)
S806
(MUTING)
S809
IC802
IC801
L801
Z801
Z802
Z803
Q807
Q809
Q804
Q803
J807
C801
D801
C807
C815
C810
C811
C804
C814
C802
D802
D803
D804
D805
D806
D807
D808
D809
D810
D811
D812
D815
D816
D817
D818
D820
D822
R802
R803
R806
R807
R809
R810
R811
R812
R813
R814
R815
R816
R820
R821
R826
R801
L803
X801
C803
C816
BALANCE
(RIGHT)
S808
(LEFT)
S807
S802
S804
S801
S803
J803A
J802A
J801A
(TUNER)
(TAPE)
(PHONO)
(CD)
INPUT SELECTOR

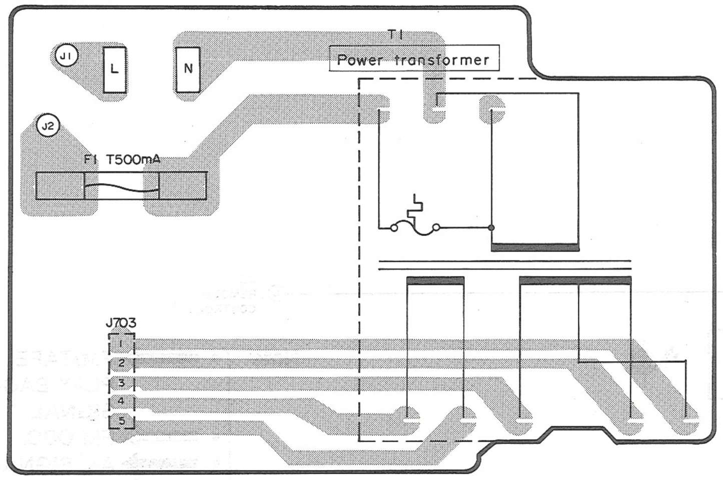
## C INPUT SELECTOR P.C.B.


16CH RANDOM PRESET TUNING
MEMORY
(1/9CH)
(2/10CH)
(3/11CH)
(4/12CH)
(5/13CH)
(6/14CH)
(7/15CH)
(8/16CH)
TUNING
(DOWN)
(UP)
FM MODE
S204
S216
S215
S214
S213
S212
S211
S210
S209
S207
S206
S205
J202
J204
R278
D219
(FM STEREO IND)

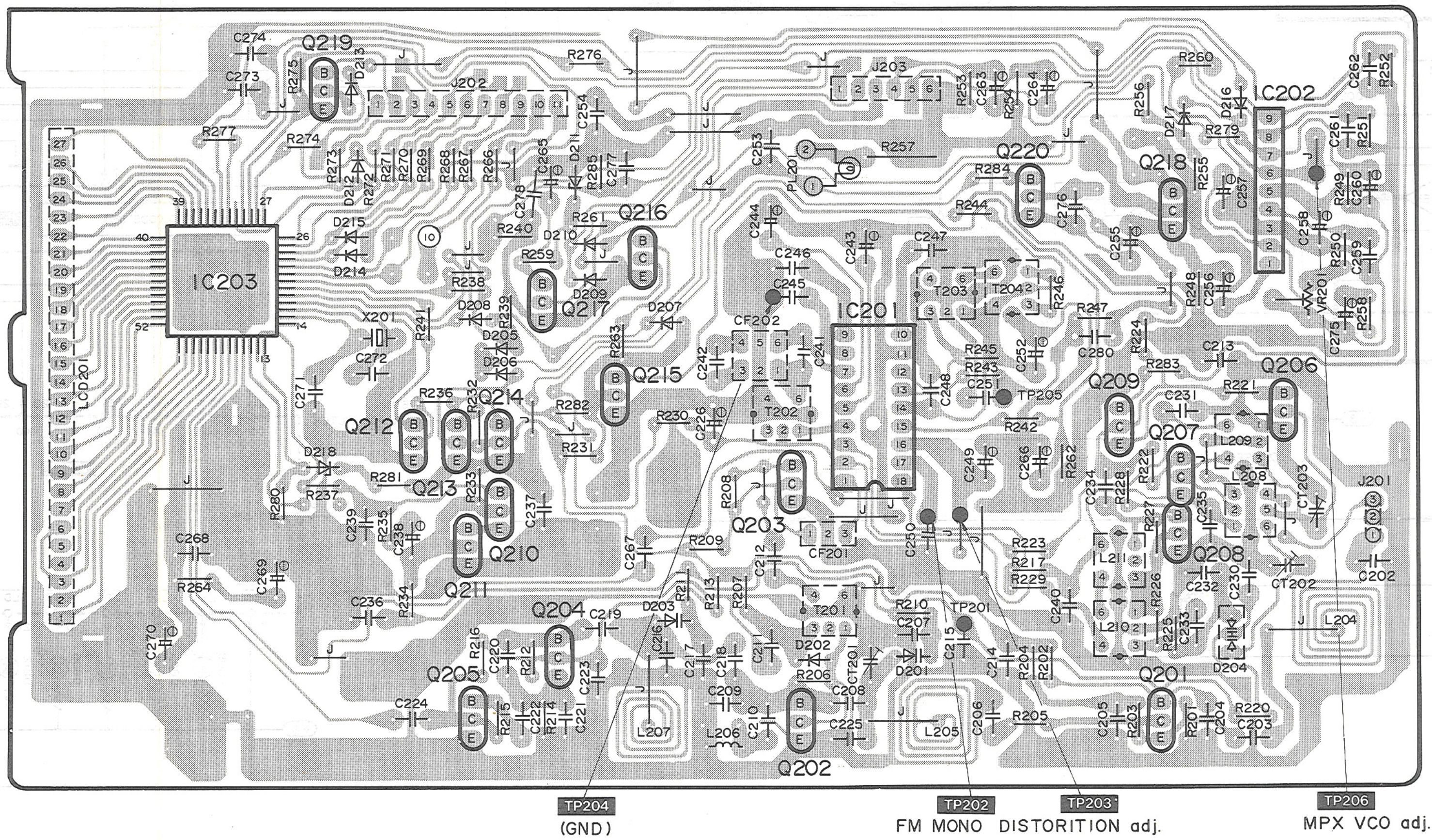
## J DOLBY SELECTOR P.C.B.


J402
in
out
(S401)
DOLBY NR

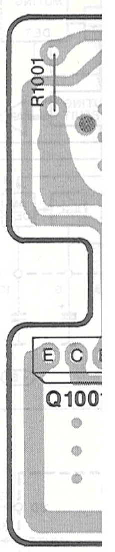
## G POWER SUPPLY P.C.B.


J1
L
N
J2
F1 T500mA
T1
Power transformer
J703

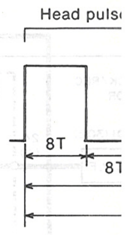
## B TUNER P.C.B.


IC203
IC201
IC202
LCD201
X201
J202
J203
J201
Q201
Q202
Q203
Q204
Q205
Q206
Q207
Q208
Q209
Q210
Q211
Q212
Q213
Q214
Q215
Q216
Q217
Q218
Q219
Q220
T201
T202
T203
T204
CF201
CF202
VR201
L204
L205
L206
L207
L208
L209
L210
L211
CT201
CT202
CT203
TP201
TP205
TP204
(GND)
TP202
TP203
FM MONO DISTORITION adj.
TP206
MPX VCO adj.

• Remo

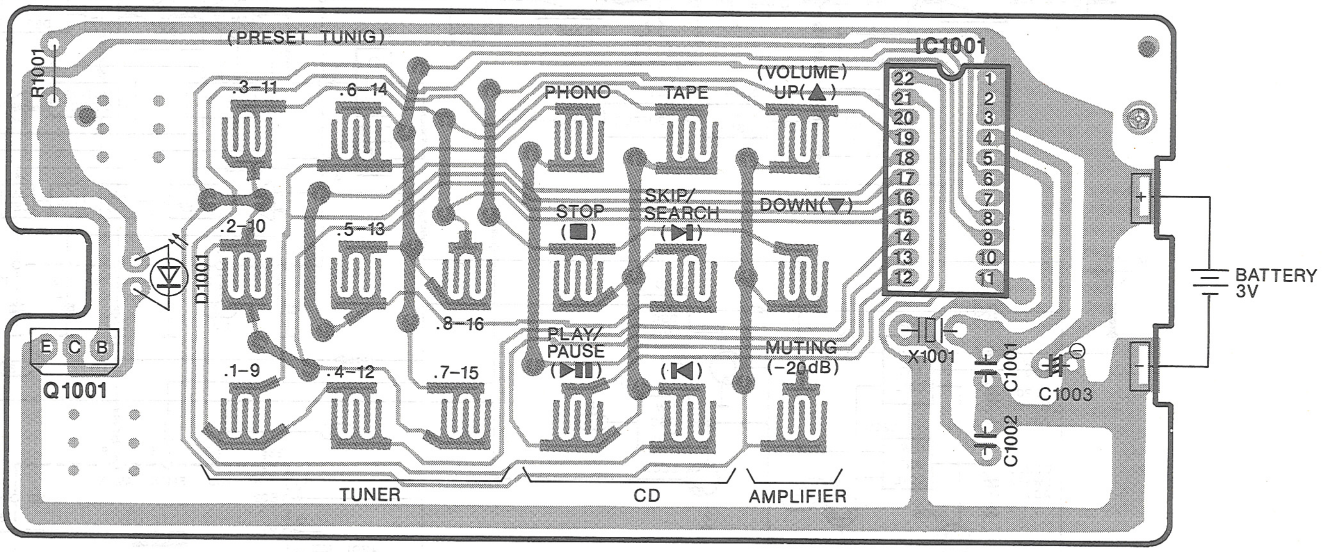

R1001
E C B
Q1001

• KEY N


Head pulse
8T
8T

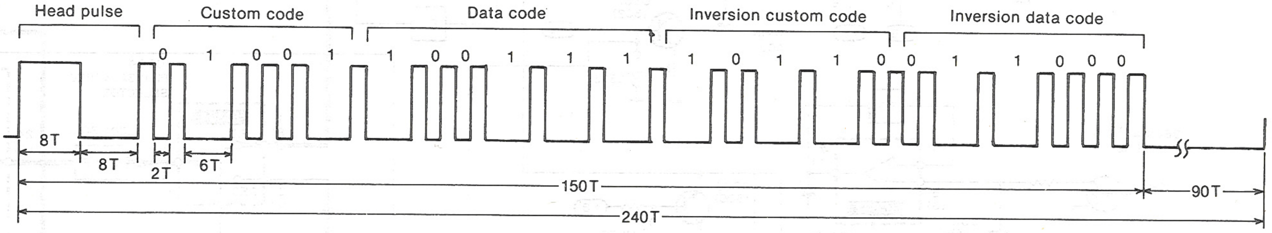
| Key No. | |
|---|---|
| 0 | A |
| 1 | V |
| 2 | V |
| 4 | C |
| 5 | C |
| 6 | C |
| 7 | C |
| 11 | C |
| 12 | C |

## • Remote-Control Transmitter


(PRESET TUNIG)
R1001
.3–11
.6–14
PHONO
TAPE
(VOLUME) UP(▲)
IC1001
22 21 20 19 18 17 16 15 14 13 12
1 2 3 4 5 6 7 8 9 10 11
.2–10
.5–13
STOP (■)
SKIP/ SEARCH (▶▶|)
DOWN(▼)
D1001
.8–16
BATTERY 3V
E C B
Q1001
PLAY/ PAUSE (▶/▮▮)
(|◀◀)
MUTING (−20dB)
X1001
C1001
C1003
C1002
.1–9
.4–12
.7–15
TUNER
CD
AMPLIFIER

## • KEY NUMBER DESCRIPTION AND DATA CODE (Example key No. 0)

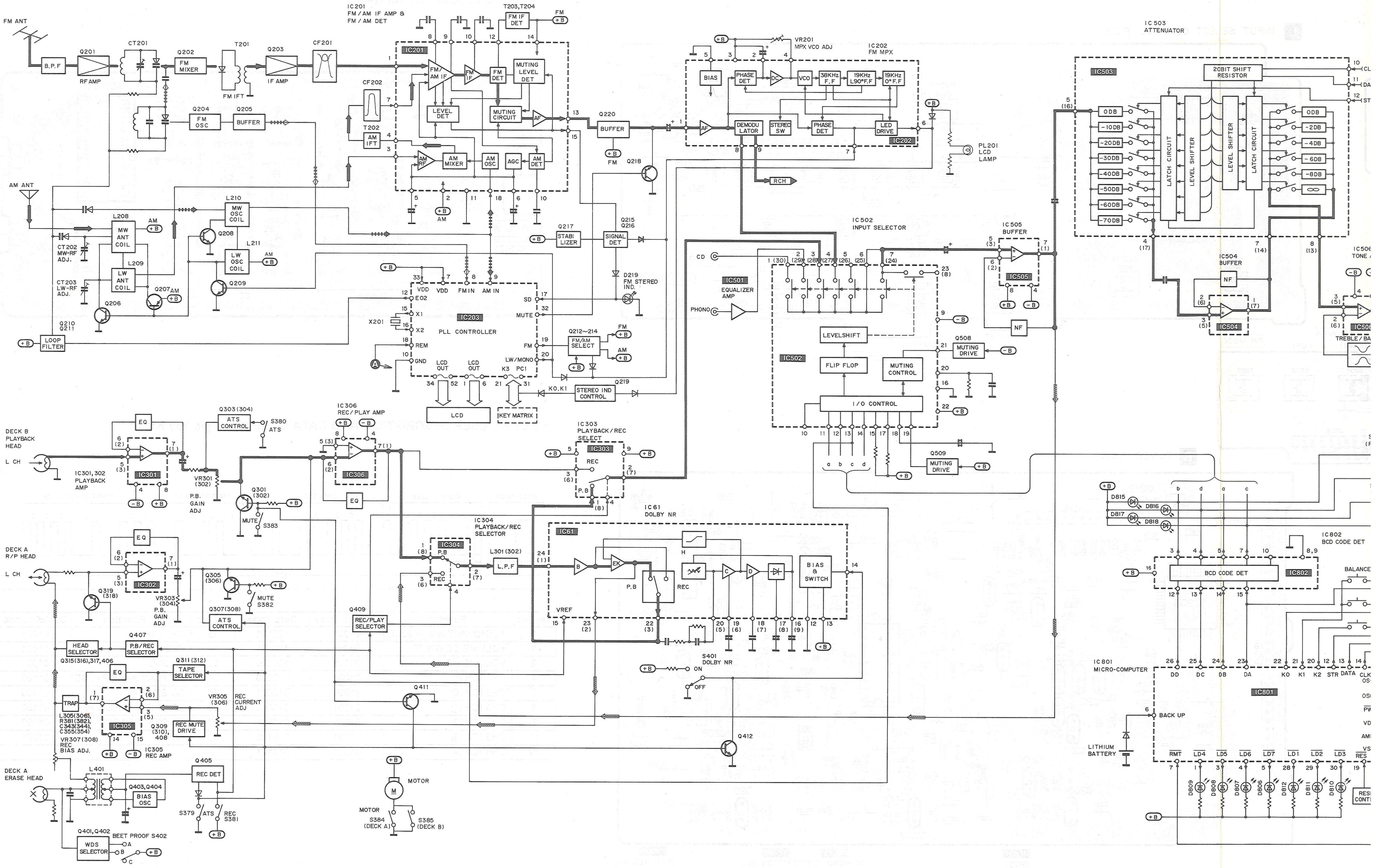
fosc=420kHz
fcar=fosc/12
fclk=fcar/16
T=1/fclk

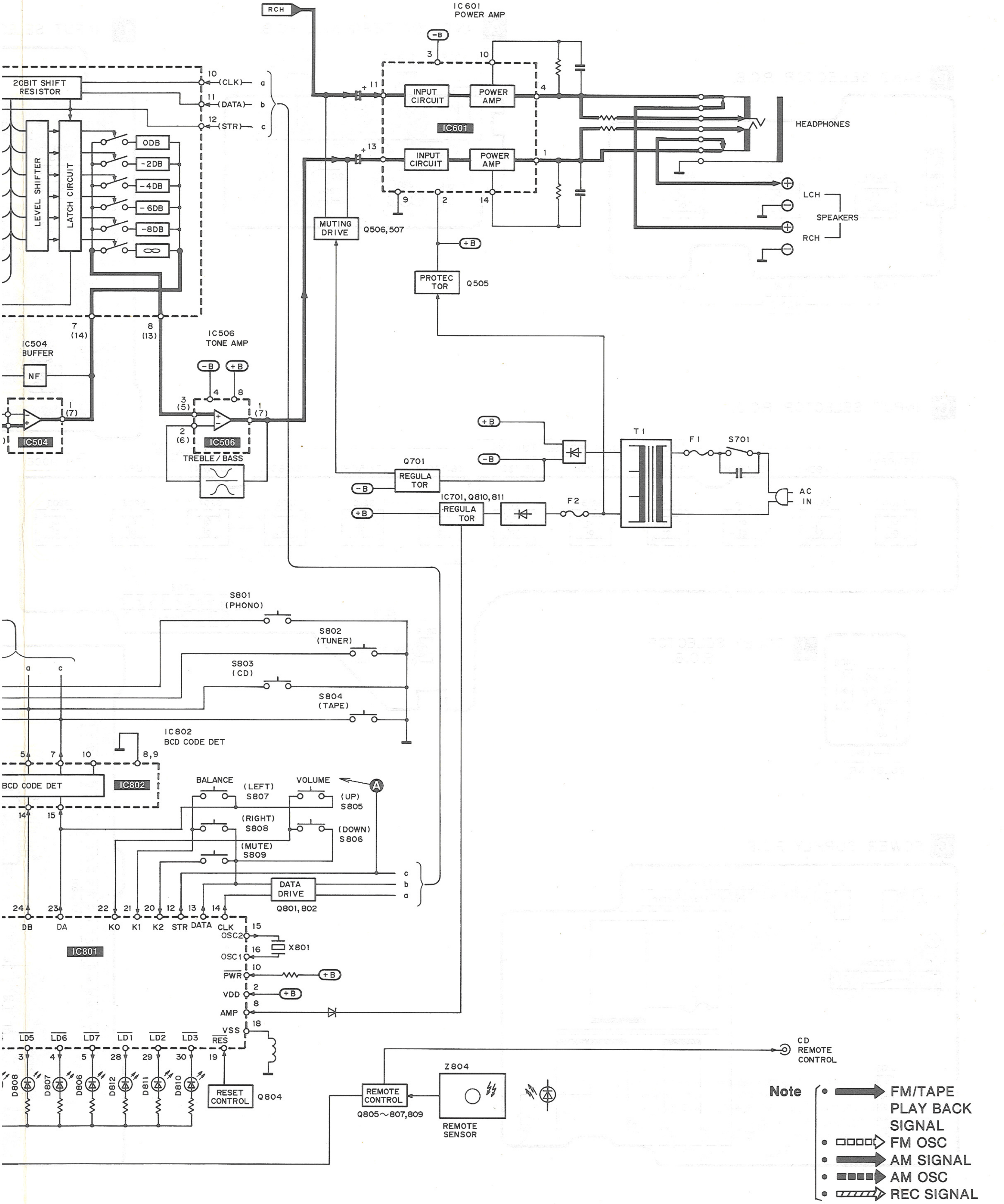

Head pulse
Custom code
Data code
Inversion custom code
Inversion data code
0 1 0 0 1
1 0 0 1 1 1
1 0 1 1 0
0 1 1 0 0 0
8T
8T
2T
6T
150T
90T
240T

| Key No. | Function | Custom code | Data code | Key No. | Function | Custom code | Data code |
|---|---|---|---|---|---|---|---|
| 0 | AUDIO MUTING (−20dB) | 01001 | 100111 | 13 | CH7 (CH15) | 01001 | 010110 |
| 1 | VOLUME DOWN ▼ | 01001 | 100101 | 14 | CH8 (CH16) | 01001 | 010111 |
| 2 | VOLUME UP ▲ | 01001 | 100100 | 20 | PHONO | 01001 | 001100 |
| 4 | CH1 (CH9) | 01001 | 010000 | 24 | CD PLAY ▶/▮▮ PAUSE | 01100 | 001010 |
| 5 | CH2 (CH10) | 01001 | 010001 | 25 | CD STOP ■ | 01100 | 000000 |
| 6 | CH3 (CH11) | 01001 | 010010 | 26 | CD SKIP/SEARCH ⏮ | 01100 | 000010 |
| 7 | CH4 (CH12) | 01001 | 010011 | 27 | CD SKIP/SEARCH ⏭ | 01100 | 000011 |
| 11 | CH5 (CH13) | 01001 | 010100 | 30 | TAPE | 01001 | 001010 |
| 12 | CH6 (CH14) | 01001 | 010101 | | | | |

adj.

# BLOCK DIAGRAM


FM ANT
B.P.F
Q201
RF AMP
CT201
Q202
FM MIXER
T201
FM IFT
Q203
IF AMP
CF201
IC201
FM / AM IF AMP & FM / AM DET
T203,T204
FM IF DET
FM/AM IF
FM IF
FM DET
MUTING LEVEL DET
LEVEL DET
MUTING CIRCUIT
AF
CF202
T202
AM IFT
AM RF
AM MIXER
AM OSC
AGC
AM DET
Q204
FM OSC
Q205
BUFFER
AM ANT
L210
MW OSC COIL
L208
MW ANT COIL
Q208
L211
LW OSC COIL
L209
LW ANT COIL
Q209
CT202 MW-RF ADJ.
CT203 LW-RF ADJ.
Q207
Q206
Q210 Q211
LOOP FILTER
Q220
BUFFER
Q218
VR201 MPX VCO ADJ
IC202 FM MPX
BIAS
PHASE DET
DC
VCO
38KHz F.F
19KHz L90°F.F
19KHz 0°F.F
AF
DEMODU LATOR
STEREO SW
PHASE DET
LED DRIVE
IC202
RCH
PL201 LCD LAMP
Q217 STABI LIZER
Q215 Q216 SIGNAL DET
D219 FM STEREO IND.
IC203
PLL CONTROLLER
VDD
FM IN
AM IN
E02
X1
X2
REM
GND
SD
MUTE
FM
LW/MONO
X201
LCD OUT
K3
PC1
LCD
KEY MATRIX
Q212~214 FM/AM SELECT
Q219
STEREO IND CONTROL
K0.K1
CD
PHONO
IC501
EQUALIZER AMP
IC502 INPUT SELECTOR
LEVELSHIFT
FLIP FLOP
MUTING CONTROL
I / O CONTROL
Q508 MUTING DRIVE
Q509 MUTING DRIVE
IC505 BUFFER
NF
IC503 ATTENUATOR
20BIT SHIFT RESISTOR
0DB
-10DB
-20DB
-30DB
-40DB
-50DB
-60DB
-70DB
LATCH CIRCUIT
LEVEL SHIFTER
-2DB
-4DB
-6DB
-8DB
IC504 BUFFER
IC506 TONE
TREBLE / BA
DECK B PLAYBACK HEAD
L CH
EQ
IC301
IC301, 302 PLAYBACK AMP
VR301 (302) P.B. GAIN ADJ
Q303 (304) ATS CONTROL
S380 ATS
IC306 REC/PLAY AMP
IC306
Q301 (302)
MUTE S383
IC303 PLAYBACK/REC SELECT
IC303
REC
P.B
IC61 DOLBY NR
IC61
IC304 PLAYBACK/REC SELECTOR
IC304
L301 (302)
L.P.F
VREF
BIAS & SWITCH
DECK A R/P HEAD
IC302
Q319 (318)
VR303 (304) P.B. GAIN ADJ
Q305 (306)
MUTE S382
Q307(308) ATS CONTROL
Q409 REC/PLAY SELECTOR
Q407 P.B/REC SELECTOR
HEAD SELECTOR
Q315(316),317,406
Q311(312) TAPE SELECTOR
TRAP
L305(306), R381(382), C343(344), C355(354)
VR307(308) REC BIAS ADJ.
IC305
IC305 REC AMP
Q309 (310), 408 REC MUTE DRIVE
VR305 (306) REC CURRENT ADJ
Q411
Q412
S401 DOLBY NR
ON
OFF
DECK A ERASE HEAD
L401
Q403,Q404 BIAS OSC
Q405 REC DET
S379 ATS
REC S381
Q401,Q402 WDS SELECTOR
BEET PROOF S402
MOTOR
S384 (DECK A)
S385 (DECK B)
D815
D816
D817
D818
IC802 BCD CODE DET
BCD CODE DET
IC802
BALANCE
IC801 MICRO-COMPUTER
IC801
DD
DC
DB
DA
KO
K1
K2
STR
DATA
BACK UP
LITHIUM BATTERY
RMT
LD4
LD5
LD6
LD7
LD1
LD2
LD3
D809
D808
D807
D806
D812
D811
D810
+B
-B


RCH
IC601
POWER AMP
-B
INPUT CIRCUIT
POWER AMP
IC601
MUTING DRIVE
Q506, 507
+B
PROTEC TOR
Q505
HEADPHONES
LCH
SPEAKERS
RCH
20BIT SHIFT RESISTOR
LEVEL SHIFTER
LATCH CIRCUIT
(CLK)
(DATA)
(STR)
0DB
-2DB
-4DB
-6DB
-8DB
IC504
BUFFER
NF
IC506
TONE AMP
TREBLE/BASS
T1
F1
S701
AC IN
Q701
REGULA TOR
IC701, Q810, 811
REGULA TOR
F2
S801
(PHONO)
S802
(TUNER)
S803
(CD)
S804
(TAPE)
IC802
BCD CODE DET
BCD CODE DET
BALANCE
(LEFT)
S807
VOLUME
(UP)
S805
(RIGHT)
S808
(DOWN)
S806
(MUTE)
S809
DATA DRIVE
Q801, 802
DB
DA
K0
K1
K2
STR
DATA
CLK
OSC2
X801
OSC1
PWR
VDD
AMP
VSS
RES
IC801
LD5
LD6
LD7
LD1
LD2
LD3
D808
D807
D806
D812
D811
D810
RESET CONTROL
Q804
REMOTE CONTROL
Q805～807, 809
Z804
REMOTE SENSOR
CD REMOTE CONTROL
Note
FM/TAPE PLAY BACK SIGNAL
FM OSC
AM SIGNAL
AM OSC
REC SIGNAL

# REPLACEMENT PARTS LIST

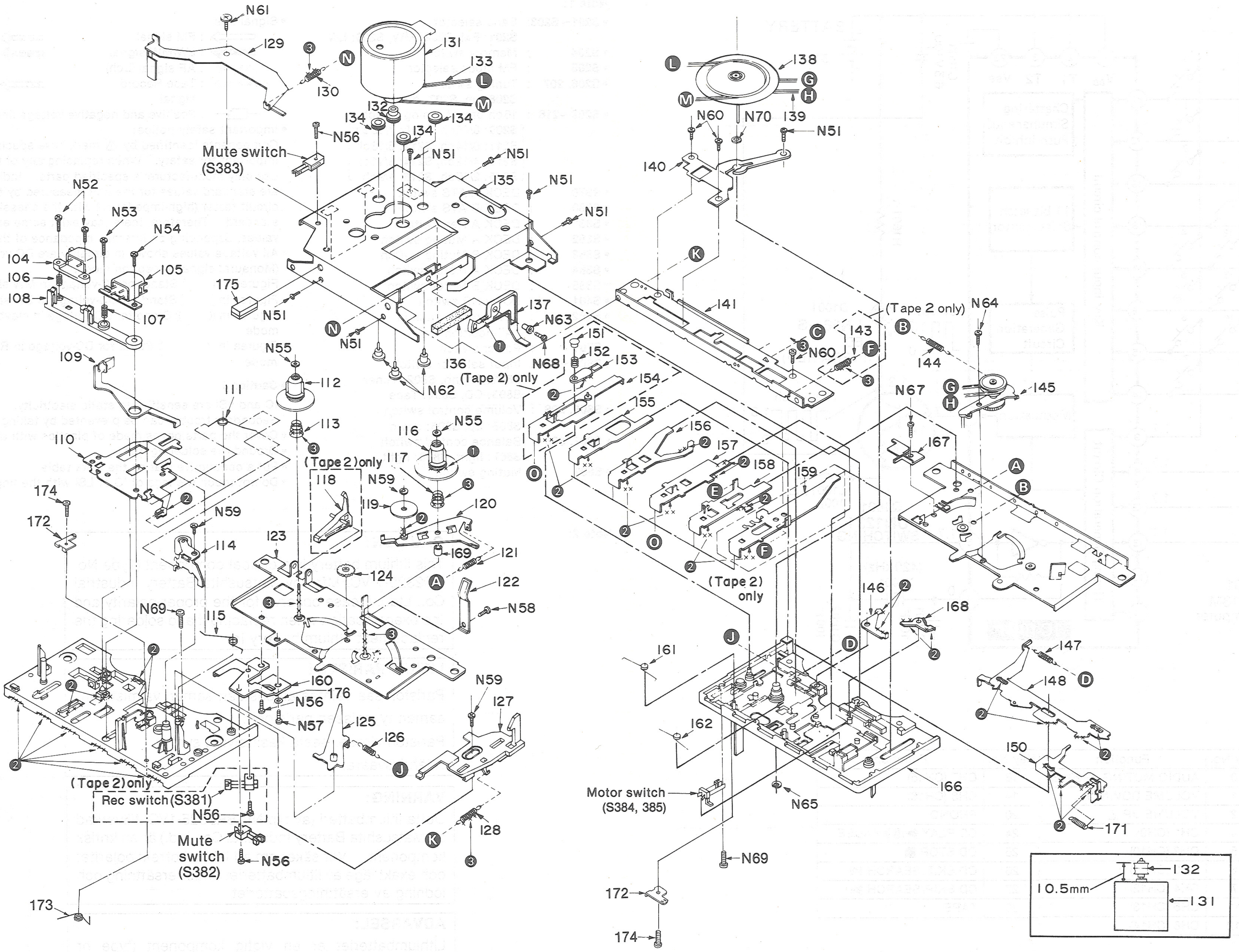
**Notes:** * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

| Ref. No. | Part No. | Part Code | Description |
|---|---|---|---|
| INTEGRATED CIRCUITS | | | |
| IC201 | AN7273A | 001 060 4214 8 | I.C. FM IF DET. & AM CON. |
| IC202 | AN7420 | 001 060 4196 3 | I.C. MPX |
| IC203 | UPD1718G514 | 001 061 1045 4 | I.C. PLL CONTROLLER |
| IC301, IC302 | AN6558F | 001 060 4009 1 | I.C. OPERATION AMP. |
| IC303, IC304 | MN6634 | 001 061 0884 7 | I.C. SWITCH |
| IC305, IC306 | AN6552F | 001 060 0274 2 | I.C. OPERATION AMP. |
| IC501 | AN6558F | 001 060 4009 1 | I.C. OPERATION AMP. |
| IC502 | LC7818 | 001 060 8407 5 | I.C. INPUT SELECTOR |
| IC503 | TC9177P | 001 061 0839 2 | I.C. VOLUME CONTROL |
| IC504, IC505 | AN6552F | 001 060 0274 2 | I.C. OPERATION AMP. |
| IC506 | AN6552F | 001 060 0274 2 | I.C. OPERATION AMP. |
| IC601 | SVI3100A | 001 061 4893 0 | I.C. POWER AMP. |
| IC701 | AN7812 | 001 060 3756 7 | I.C. REGULATOR |
| IC801 | LC6523C-3068 | 001 061 1067 8 | I.C. MICRO COMPUTER |
| IC802 | DN74LS145 | 001 060 4587 2 | I.C. BCB CODE DET. |
| TRANSISTORS | | | |
| Q201 | 2SC2787L | 001 030 2508 3 | TRANSISTOR |
| Q202 | 2SC2786M | 001 030 5078 2 | TRANSISTOR |
| Q203 | 2SC3313CTA | 001 030 6020 6 | TRANSISTOR |
| Q204, Q205 | 2SC2787L | 001 030 2508 3 | TRANSISTOR |
| Q206 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q207 | 2SA1175FE | 001 030 5075 5 | TRANSISTOR |
| Q208, Q209 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q210, Q211 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q212 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q213, Q214 | 2SA1175FE | 001 030 5075 5 | TRANSISTOR |
| Q215 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q216 | 2SA1175FE | 001 030 5075 5 | TRANSISTOR |
| Q217, Q218 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q219 | 2SA1175FE | 001 030 5075 5 | TRANSISTOR |
| Q220, Q301 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q302, Q303 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q304 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q305, Q306 | 2SD1450R | 001 030 4366 1 | TRANSISTOR |
| Q307, Q308 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q309, Q310 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q311, Q312 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q315, Q316 | 2SC1845E | 001 030 1129 4 | TRANSISTOR |
| Q317 | 2SC1845E | 001 030 1129 4 | TRANSISTOR |
| Q318, Q319 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q401, Q402 | 2SD1512R | 001 030 5015 7 | TRANSISTOR |
| Q403, Q404 | 2SD592ANCQ | 001 030 1752 7 | TRANSISTOR |
| Q405 | 2SD592ANCQ | 001 030 1752 7 | TRANSISTOR |
| Q406 | 2SA1175FE | 001 030 5075 5 | TRANSISTOR |
| Q407, Q408 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q409 | 2SA1175FE | 001 030 5075 5 | TRANSISTOR |
| Q411, Q412 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q505 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q506, Q507 | 2SK301 | 001 030 2428 2 | TRANSISTOR |
| Q508 | 2SA1175FE | 001 030 5075 5 | TRANSISTOR |
| Q509 | DTC114YSTP | 001 030 5646 2 | TRANSISTOR |
| Q701 | 2SA684-RNC | 001 030 0352 3 | TRANSISTOR |
| Q801 | DTA114ESTP | 001 030 5275 9 | TRANSISTOR |
| Q802 | DTC114ESTP | 001 030 5025 5 | TRANSISTOR |
| Q803 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q804 | DTC114YSTP | 001 030 5646 2 | TRANSISTOR |
| Q805 | 2SC2785F | 001 030 5076 4 | TRANSISTOR |
| Q806 | DTC114ESTP | 001 030 5025 5 | TRANSISTOR |
| Q807 | DTA114ESTP | 001 030 5275 9 | TRANSISTOR |
| Q809 | DTC114YSTP | 001 030 5646 2 | TRANSISTOR |
| Q810, Q811 | 2SA1175FE | 001 030 5075 5 | TRANSISTOR |
| DIODES | | | |
| D201 | MA325G-Y | 001 032 7205 5 | ZENER |
| D202 | MA165 | 001 032 0494 0 | DIODE |
| D203 | MA325G-Y | 001 032 7205 5 | ZENER |
| D204 | KV1260Z | 001 032 7237 7 | DIODE |
| D205, D206 | MA165 | 001 032 0494 0 | DIODE |
| D207, D208 | MA165 | 001 032 0494 0 | DIODE |
| D209, D210 | MA165 | 001 032 0494 0 | DIODE |
| D211 | MA4062-M | 001 032 7211 7 | DIODE |
| D212, D213 | MA165 | 001 032 0494 0 | DIODE |
| D214, D215 | MA165 | 001 032 0494 0 | DIODE |
| D216 | MA29WA | 001 032 7250 0 | DIODE |
| D217 | MA165 | 001 032 0494 0 | DIODE |
| D218 | MA4062-M | 001 032 7211 7 | DIODE |
| D219 | SVGLB74UR3HL | 001 032 7553 8 | L.E.D |
| D401, D402 | MA165 | 001 032 0494 0 | DIODE |
| D403 | MA4082M | 001 032 4955 6 | DIODE |
| D405, D406 | MA165 | 001 032 0494 0 | DIODE |
| D503, D505 | MA165 | 001 032 0494 0 | DIODE |
| D506 | MA165 | 001 032 0494 0 | DIODE |
| D701, D702 | GP15GLF | 001 032 8222 0 | DIODE |
| D703, D704 | GP15GLF | 001 032 8222 0 | DIODE |
| D705, D706 ⚠ | SVD1SR35200A | 001 032 3951 4 | RECTIFIER |
| D707, D708 ⚠ | SVD1SR35200A | 001 032 3951 4 | RECTIFIER |
| D709 | MA4120 | 001 032 7292 0 | DIODE |
| D710 | MA165 | 001 032 0494 0 | DIODE |
| D801 | MA4051-M | 001 032 4947 6 | DIODE |
| D802 | MA4056-M | 001 032 7209 1 | DIODE |
| D803, D804 | MA165 | 001 032 0494 0 | DIODE |
| D805 | MA165 | 001 032 0494 0 | DIODE |
| D806, D807 | LN88RCPP | 001 032 5530 3 | LED |
| D808, D809 | LN88RCPP | 001 032 5530 3 | LED |
| D810, D811 | LN88RCPP | 001 032 5530 3 | LED |
| D812 | LN88RCPP | 001 032 5530 3 | LED |
| D813, D814 | MA165 | 001 032 0494 0 | DIODE |
| D815, D816 | LN88RCPP | 001 032 5530 3 | LED |
| D817, D818 | LN88RCPP | 001 032 5530 3 | LED |
| D819 | MA4030M | 001 032 5807 3 | DIODE |
| D820 | MA4062-M | 001 032 7211 7 | DIODE |
| D822 | MA165 | 001 032 0494 0 | DIODE |
| D823 ⚠ | SVD1SR35200A | 001 032 3951 4 | RECTIFIER |
| VARIABLE RESISTORS | | | |
| VR201 | EVND4AA00B53 | 001 180 2319 9 | V.R., 5KΩ(B) |
| VR301, VR302 | EVND4AA00B24 | 001 180 2244 1 | VARIABLE RESISTOR |
| VR303, VR304 | EVND4AA00B24 | 001 180 2244 1 | VARIABLE RESISTOR |
| VR305, VR306 | EVND4AA00B54 | 001 180 2246 9 | V.R. |
| VR307, VR308 | EVND4AA00B25 | 001 180 2245 0 | VARIABLE RESISTOR |
| VR401 | EVND4AA00B53 | 001 180 2319 9 | V.R., 5KΩ(B) |
| VR501, VR502 | EWC2XAF25C15 | 001 174 9046 3 | VARIABLE RESISTOR |
| VARIABLE CAPACITORS | | | |
| CT201 | ECRHA007A41 | 001 141 0554 7 | TRIMMER |
| CT202 | ECRHA010A41 | 001 142 0565 9 | TRIMMER |
| CT203 | ECRHA020D41 | 001 142 0598 0 | POLYETHYLENE CAPACITOR |
| COILS AND TRANSFORMERS | | | |
| L202, L203 | ELEPK1R0MA | 001 211 0854 9 | COIL |
| L206 | ELEPK1R2MA | 001 211 0621 4 | CHOKE COIL |
| L208 | SLA2B3-P | 001 211 2249 6 | ANTENNA COIL |
| L209 | SLA1B7R-P | 001 211 2779 5 | ANTENNA COIL |
| L210 | SL02B9R-P | 001 211 2783 9 | OSCILLATOR COIL |
| L211 | SL01B5-P | 001 211 2782 0 | OSCILLATOR COIL |
| L301, L302 | QLB40048 | 001 210 7275 9 | COIL |
| L303, L304 | SLQU272-1Y-C | 001 211 3679 4 | CHOKE COIL |
| L305, L306 | SLM1C77-K | 001 211 0881 6 | MPX COIL |
| L401 | SL09C9-K | 001 211 0882 5 | OSCILLATOR COIL |
| L801, L803 | ELEPK181KA | 001 211 1076 3 | CHOCK COIL |
| T1 ⚠ | SLTF5M8-W | 001 202 9039 7 | POWER TRANSFORMER |
| EK, XL<br>T1 ⚠ | SLTF5M9-W | 001 202 9040 4 | POWER TRANSFORMER |

| Ref. No. | Part No. | Part Code | Description |
|---|---|---|---|
| T201 | SLI4B108-Z | 001 215 1975 7 | I.F.TRANSFOMER |
| T202 | SLI2B101-M | 001 211 0654 5 | I.F.TRANSFORMER |
| T203 | SLI4B511-Z | 001 211 0655 4 | I.F. TRANSFORMER |
| T204 | SLI4B513-Z | 001 211 0656 3 | I.F. TRANSFORMER |
| COMPONENT COMBINATIONS | | | |
| Z401, Z801 | EXBF5E103J | 001 230 1748 9 | CNMBINATION COM |
| Z802 | EXBF8E681J | 001 230 2898 2 | CNMBINATION COM |
| Z803 | EXBF8E103J | 001 230 1753 2 | CNMBINATION COM |
| Z804 | GP1U509M | 001 033 0238 9 | DIODE, REMOTE SENSOR |
| FILTERS | | | |
| CF201 | SVFE107MS2-A | 001 241 0777 7 | CERAMIC FILTER |
| CF202 | SVFSFZ450F7L | 001 241 0429 4 | CERAMIC FILTER |
| OSCILLATORS | | | |
| X201 | SVQ43U452-2 | 001 250 2002 8 | OSCLLATOR |
| X801 | SVFCSA400MG | 001 241 1076 5 | CERAMIC FILTER |
| DISPLAYS | | | |
| CD201 | SALHLC9225-6 | 001 080 0292 8 | DISPLAY |
| LAMPS | | | |
| PL201 | XAMR78S250 | 002 351 0397 4 | LAMP |
| FUSES | | | |
| F1 ⚠<br>EK | XBA2C04TB0 | 002 380 1459 0 | CURRENT FUSE |
| F1 ⚠<br>EH, EB, EF, E. | XBA2C05TB0 | 002 380 1350 2 | FUSE, T0.5A 250V |
| XL<br>F2 ⚠ | XBA2C12TB0 | 002 380 1310 0 | FUSE |
| SWITCHES | | | |
| S201, S202 | EVQQS205K | 003 439 1236 3 | SW |
| S203, S204 | EVQQS205K | 003 439 1236 3 | SW |
| S205, S206 | EVQQS205K | 003 439 1236 3 | SW |
| S207, S209 | EVQQS205K | 003 439 1236 3 | SW |
| S210, S211 | EVQQS205K | 003 439 1236 3 | SW |
| S212, S213 | EVQQS205K | 003 439 1236 3 | SW |
| S214, S215 | EVQQS205K | 003 439 1236 3 | SW |
| S216 | EVQQS205K | 003 439 1236 3 | SW |
| S379, 380 | SSP82-1 | 003 434 1015 9 | LEAF SWITCH |
| S381 | SMQT1451 | 003 434 0905 8 | LEAF SWITCH |
| S382, S383 | SMQT1615 | 003 434 0993 2 | LEAF SWITCH |
| S384, S385 | SMQT1466 | 003 434 0907 6 | LEAF SWITCH |
| S401 | SSH1220 | 003 435 6008 3 | SWITCH |
| S402 | SSS150 | 003 431 3104 6 | SWITCH |
| S701 | SSH1071 | 003 435 3185 9 | SWITCH |
| S801, S802 | EVQQS205K | 003 439 1236 3 | SW |
| S803, S804 | EVQQS205K | 003 439 1236 3 | SW |
| S805, S806 | EVQQS205K | 003 439 1236 3 | SW |
| S807, S808 | EVQQS205K | 003 439 1236 3 | SW |
| S809 | EVQQS205K | 003 439 1236 3 | SW |
| BATTERY | | | |
| BAT1 | BR2325-1VC | 016 956 0004 6 | SECONDARY BATTERY |

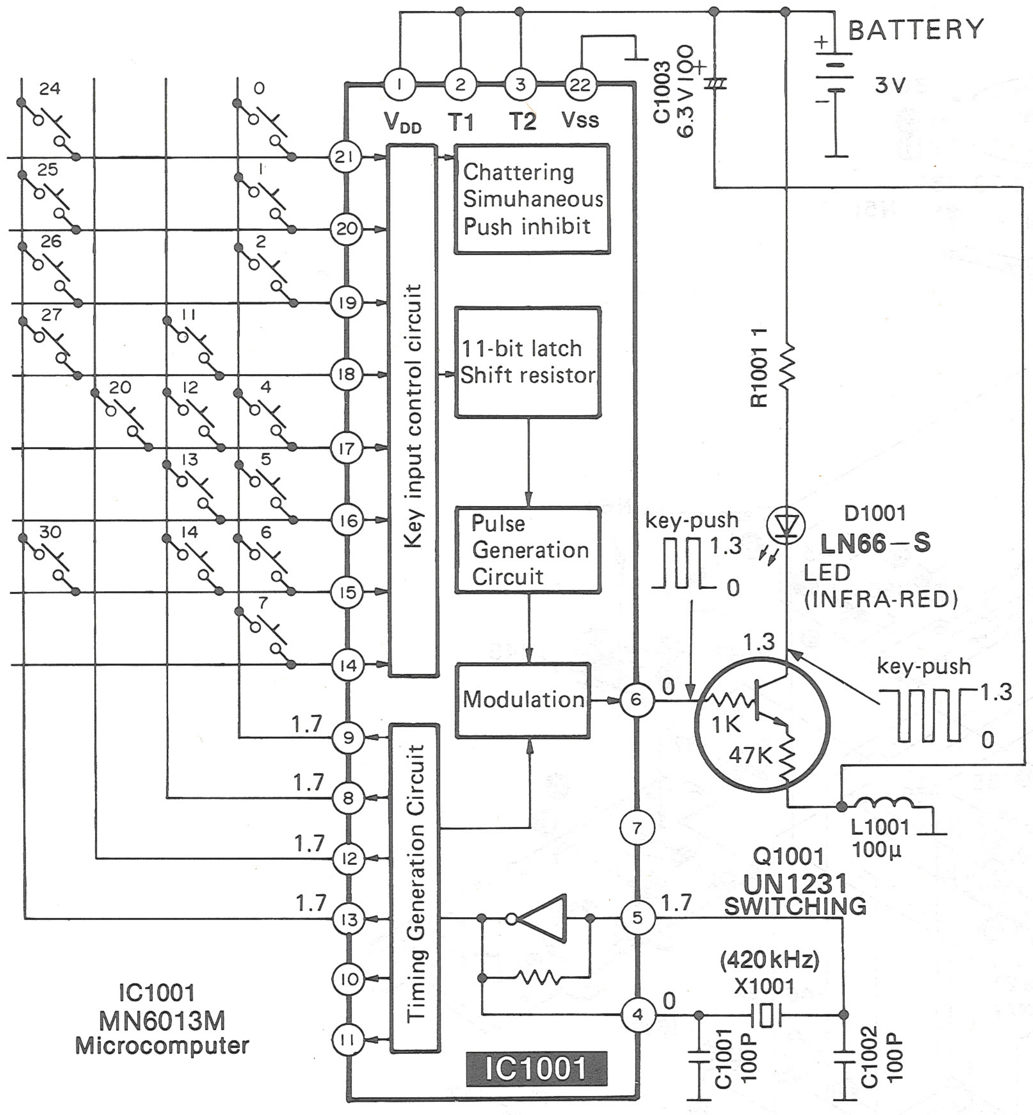
| Ref. No. | Part No. | Part Code | Description |
|---|---|---|---|
| CASSETTE DECK | | | |
| 104 | SJH94 | 001 270 0774 7 | E HEAD (DECK A) |
| 105, 105 | SJH92 | 001 270 1308 5 | R/P HEAD |
| 106 | SMQT1469 | 016 726 0432 2 | SPRING |
| 107 | RFS447Z | 015 726 2437 7 | SPRING |
| 108 | SMQT1468 | 016 630 0239 2 | HEAD BASE (DECK A) |
| 109 | SMQT1653 | 016 630 1747 3 | SENSING PLATE |
| 110 | SMQT1560 | 016 630 1674 3 | HEAD PANEL (DECK A) |
| 111 | SMQT1622 | 016 726 0767 2 | SPRING |
| 112 | SMQT1643 | 016 913 0002 7 | SUPPLY REEL ASS'Y |
| 113 | SMQT1639 | 016 726 0776 1 | SPRING |
| 114 | RFR29ZA | 015 740 0302 7 | ROLLER |
| 115 | RFS531ZA | 015 726 2470 6 | SPRING |
| 116 | SMQT1637 | 016 765 0054 9 | TAKE UP REEL ASS'Y |
| 117 | SMQT1621 | 016 726 0766 3 | SPRING |
| 118 | SMQT1605 | 016 718 3302 5 | REC LEVER (DECK A) |
| 119 | RFG61ZA | 015 745 0849 2 | GEAR |
| 120 | SMQT1658 | 016 630 1745 5 | PLATE |
| 121 | RFS450Z | 015 726 2440 2 | SPRING |
| 122 | RFS467Z | 015 727 0783 5 | PACK SPRING |
| 123 | SMQT1564 | 016 630 1678 9 | REEL BASE ASS'Y |
| 124 | SMQT1620 | 016 745 0182 4 | FF GEAR |
| 125 | RFY549ZA | 015 718 3506 3 | LEVER |
| 126 | RFS453Z | 015 726 2442 0 | SPRING |
| 127 | SMQT1569 | 016 718 3278 8 | LEVER |
| 128 | RFS454Z | 015 726 2443 9 | COIL SPRING |
| 129 | SMQT1724 | 016 718 3411 1 | LEVER |
| 130 | RFY585ZA | 015 718 4091 1 | LEVER |
| 131 | MMI6N2LNC | 002 310 2108 8 | DC MOTOR |
| 132 | SMQT1619 | 016 741 0073 8 | PULLEY |
| 133 | SMQT1723 | 016 754 0080 8 | ANGULAR BELT |
| 134 | RFI27Z | 015 653 0531 2 | MOTOR RUBBER |
| 135 | SMQT1722 | 016 650 5416 1 | BTACKET |
| 136 | SMQT1579 | 016 655 0614 2 | FELT |
| 137 | RFY582Z | 015 718 4089 5 | LEVER |
| 138 | RFF39Z | 015 756 0406 4 | WHEEL (DECK B) |
| 138 | RFF40ZA | 015 756 0407 3 | WHEEL |
| 139 | SMQT1563 | 016 752 0118 1 | RF BELT |
| 140 | SMQT1601 | 016 641 0239 1 | METAL GUIDE |
| 141 | SMQT1557 | 016 630 1675 2 | SUB CHASSIS |
| 142 | RFS530ZA | 015 726 2469 9 | COIL SPRING |
| 143 | SMQT1465 | 016 726 0434 0 | SPRING (DECK A) |
| 144 | RFS532ZA | 015 728 1316 9 | SPRING |
| 145 | SMQT1727 | 016 747 0026 5 | CLUTCH |
| 146 | SMQT1555 | 016 718 3270 6 | REW LEVER |
| 147 | RFS466Z | 015 726 2449 3 | SPRING |
| 148 | SMQT1548 | 016 630 1676 1 | PUSH BUTTON ACTUATOR |
| 150 | RFY541Z | 016 630 1761 5 | ANGLE |
| 151 | SMQT1463 | 016 643 0597 2 | STOPPER |
| 152 | RFS459Z | 015 726 2444 8 | SPRING |
| 153 | SMQT1556 | 016 718 3269 9 | LEVER |
| 154 | SMQT1554 | 016 718 3271 5 | PAUSE BUTTON LEVER |
| 155 | SMQT1553 | 016 718 3272 4 | STOP BUTTON LEVER |
| 156 | SMQT1552 | 016 718 3273 3 | FF BUTTON LEVER |
| 157 | SMQT1551 | 016 718 3274 2 | REW BUTTON LEVER |
| 158 | SMQT1550 | 016 718 3275 1 | PLAY BUTTON LEVER |
| 159 | SMQT1580 | 016 718 3279 7 | LEVER, REC (DECK A) |
| 160 | SMQT1618 | 016 630 1708 0 | ANGLE |
| 161 | RFS462Z | 015 728 1267 1 | SPRING |
| 162 | SMQT1558 | 016 726 0727 0 | SPRING |
| 166 | SMQT1675 | 016 630 1844 3 | PLATE |
| 167 | SMQT1568 | 016 650 5145 5 | ANGLE |
| 168 | SMQT1628 | 016 643 0940 7 | P.R STOPPER |
| 169 | SMQT1641 | 016 643 0939 0 | COLLER |
| 171 | RFS567Z | 015 728 1424 6 | SPRING |
| 172 | SMQT1725 | 016 650 5419 8 | BRACKET |
| 173 | SMQT1726 | 016 718 3412 0 | LEVER |
| 174 | SMQT1729 | 016 713 0437 8 | SCREW |
| 175 | SMQT1730 | 016 653 1218 6 | RUBBER SPACER |
| 176 | XWA2 | 005 513 4400 6 | WASHER |
| N51 | XTN2+4H | 005 501 2158 1 | SCREW |
| N52 | XYN2D8 | 005 503 0922 7 | SCREW |
| N53 | XYN2DB7 | 005 503 0920 9 | SCREW |
| N54 | XYN2D7 | 005 501 0921 8 | SCREW |
| N55 | RFN142Z | 005 513 3262 2 | WASHER |
| N56 | XYN2+C5 | 005 500 1291 6 | SCREW |
| N57 | XTN2+5H | 005 501 2162 5 | SCREW |
| N58 | XTN2+3H | 005 501 4724 5 | SCREW |
| N59 | RFN149Z | 005 513 3269 5 | WASHER |
| N59 | SMQT1537 | 005 500 5082 7 | SCREW |
| N60 | XTB2+5G | 005 501 2615 7 | SCREW |
| N61 | RFE239Z | 005 500 5057 8 | SCREW |
| N62 | SMQ4918 | 016 643 0446 6 | SCREW |
| N63 | SMQT1617 | 016 643 0918 5 | COLOR |
| N64 | SMQT1624 | 005 500 5729 1 | SCREW |
| N65 | RFN123Z | 005 513 3685 3 | WASHER |
| N67 | XTN2+6G | 005 501 1622 2 | SCREW |
| N68 | XTN2+6H | 005 501 3459 7 | SCREW |
| N69 | RFE98ZA | 005 500 4387 7 | SCREW |
| N70 | RFN153ZA | 005 513 3274 8 | WASHER |

## MECHANICAL PARTS LOCATION


N61
129
130
131
133
132
134
134
134
N56
Mute switch
(S383)
N51
N51
135
N51
N51
N52
N53
N54
104
105
106
108
107
175
N51
137
N63
N68
(Tape 2) only
136
N62
N51
N55
112
109
111
113
110
116
N55
117
(Tape 2)only
118
N59
119
120
121
122
174
172
N59
114
123
169
124
N58
N69
115
160
N56
176
N57
125
126
N59
127
128
(Tape 2)only
Rec switch(S381)
N56
Mute
switch
(S382)
N56
173
138
N60
N70
139
N51
140
141
151
152
153
154
155
156
157
158
159
N60
143
144
(Tape 2 only)
N64
145
N67
167
(Tape 2)
only
146
168
147
148
150
171
161
162
166
Motor switch
(S384, 385)
N65
N69
172
174
10.5mm
132
131
A
B
C
D
E
F
G
H
J
K
L
M
N
O
1
2
3

| |
|---|
| 104 106 108 110 109 107 105 115 114 111 118 112 113 125 119 124 126 117 116 120 128 127 122 121 |
| 129 123 130 134 132 134 131 134 136 133 135 137 151 152 140 141 139 138 143 146 144 150 145 148 147 132 131 |
| 173 172 174 175 160 176 169 172 153 174 155 154 161 162 156 157 158 159 167 166 168 171 |

## ■ SCHEMATIC DIAGRAM OF REMOTE-CONTROL TRANSMITTER


BATTERY
3V
VDD
T1
T2
Vss
C1003
6.3V100
Chattering
Simuhaneous
Push inhibit
11-bit latch
Shift resistor
Pulse
Generation
Circuit
Modulation
Key input control circuit
Timing Generation Circuit
IC1001
R1001 1
key-push
1.3
0
D1001
LN66—S
LED
(INFRA-RED)
1.3
key-push
1.3
0
1K
47K
L1001
100µ
Q1001
UN1231
SWITCHING
1.7
(420kHz)
X1001
C1001
100P
C1002
100P
IC1001
MN6013M
Microcomputer
24
25
26
27
30
0
1
2
4
5
6
7
11
12
13
14
20
21
20
19
18
17
16
15
14
9
8
12
13
10
11
1
2
3
22
6
7
5
4
1.7
1.7
1.7
1.7

| Key No. | Function | Key No. | Function |
|---|---|---|---|
| 0 | AUDIO MUTING (−20dB) | 13 | CH7 (CH15) |
| 1 | VOLUME DOWN ▼ | 14 | CH8 (CH16) |
| 2 | VOLUME UP ▲ | 20 | PHONO |
| 4 | CH1 (CH9) | 24 | CD PLAY ▶/❚❚ PAUSE |
| 5 | CH2 (CH10) | 25 | CD STOP ■ |
| 6 | CH3 (CH11) | 26 | CD SKIP/SEARCH ⏮ |
| 7 | CH4 (CH12) | 27 | CD SKIP/SEARCH ⏭ |
| 11 | CH5 (CH13) | 30 | TAPE |
| 12 | CH6 (CH14) | | |

## ■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time switch the development of new technology)

**Note 1:**

- **S201～S203**: Band selector
  **S201**: FM, **S202**: MW, **S203**: LW
- **S204** : Memory switch
- **S205** : FM mode selector
- **S206, 207** : Tuning switch
  **S206**: up, **S207**: down
- **S209～216** : 16ch preset tuning switch
  [**S209**: 8/16ch, **S210**: 7/15ch
  **S211**: 6/14ch, **S212**: 5/13ch
  **S213**: 4/12ch, **S214**: 3/11ch
  **S215**: 2/10ch, **S216**: 1/9ch]
- **S379** : DECK A ATS switch
- **S380** : DECK B ATS switch
- **S381** : DECK A Rec switch
- **S382** : DECK A Muting switch
- **S383** : DECK B Muting switch
- **S384** : DECK A Motor switch
- **S385** : DECK B Motor switch
- **S401** : Dolby NR switch
- **S402** : Beat proof switch in "A" position
- **S701** : Power switch
- **S801～804** : Input selector switch
  **S801**: Phono, **S802**: Tuner
  **S803**: CD, **S804**: Tape
- **S805, 806** : Volume control switch
  **S805**: up, **S806**: down
- **S807, 808** : Balance control switch
  **S807**: light, **S808**: right
- **S809** : Muting switch

- Signal line
  ⇨ : FM signal
  ➡ : LW/MW signal
  ⇢ : AF signal (Lch)
  ⇢ ⇢ : Tape Record signal
  ▭▭▭⇨ : FM OSC
  ▬▬▬➡ : LW/MW OSC
  ▨⇨ : Tape playback signal
  —▭— : Positive and negative voltage line
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts. Indicated voltage values are standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on internal impedance of the DC circuit tester.
- All voltage values shown in circuitry are DC voltage in FM signal (Monaural signal) reception mode.
  Figures in ( ) Stand for DC-voltage in MW signal reception mode
  Figures in [ ] Stand for DC-voltage in LW signal reception mode
  Figures in (( )) Stand for DC-voltage in playback signal reception mode
  Figures in 《 》 Stand for DC-voltage in REC signal reception mode

* **Caution !**
  IC and LSI are sensitive to static electricity.
  Secondary trouble can be prevented by taking care during repair.
* Cover the parts boxes made of plastics with alminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

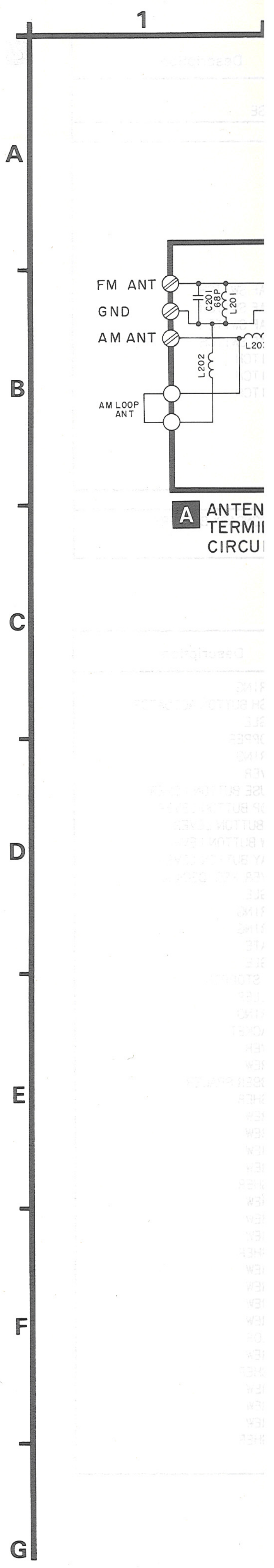
**Note 2:**

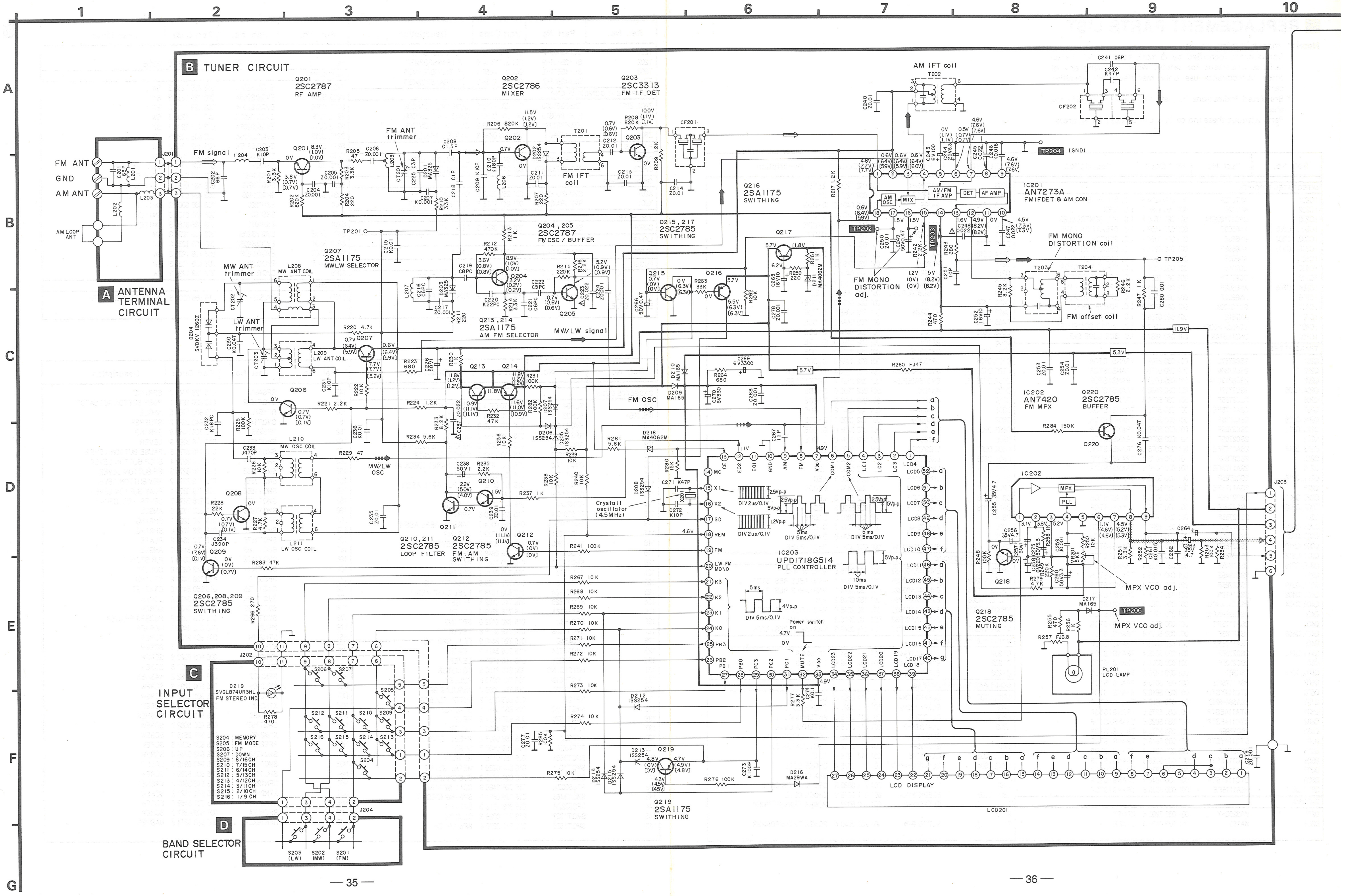
**CAUTION:**
This lithium battery is a critical component (Type No. BR2325-1 VC. Mfrd by Matsushita Battery Industrial Co., Ltd.). Please observe for the proper polarity and the exact location when replacing it and soldering the replacement lithium battery in.

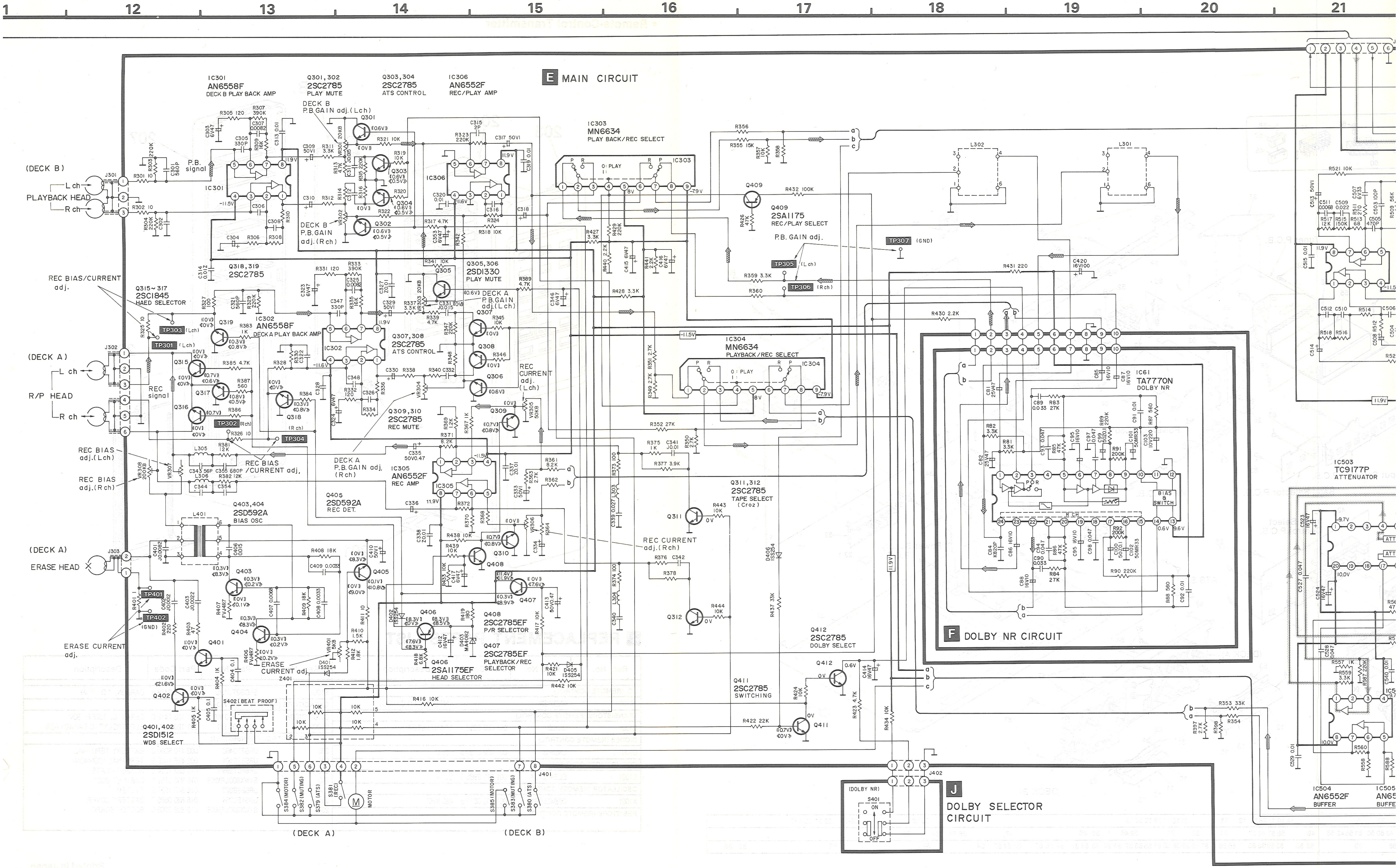
**LITIUM PARISTO!**
Pariston saa vaihtaa ainoastaan saman valmistajan saman tyyppiseen paristoon.
Pariston virheellisestä käsittelystä syntyy rajähdysvaara.

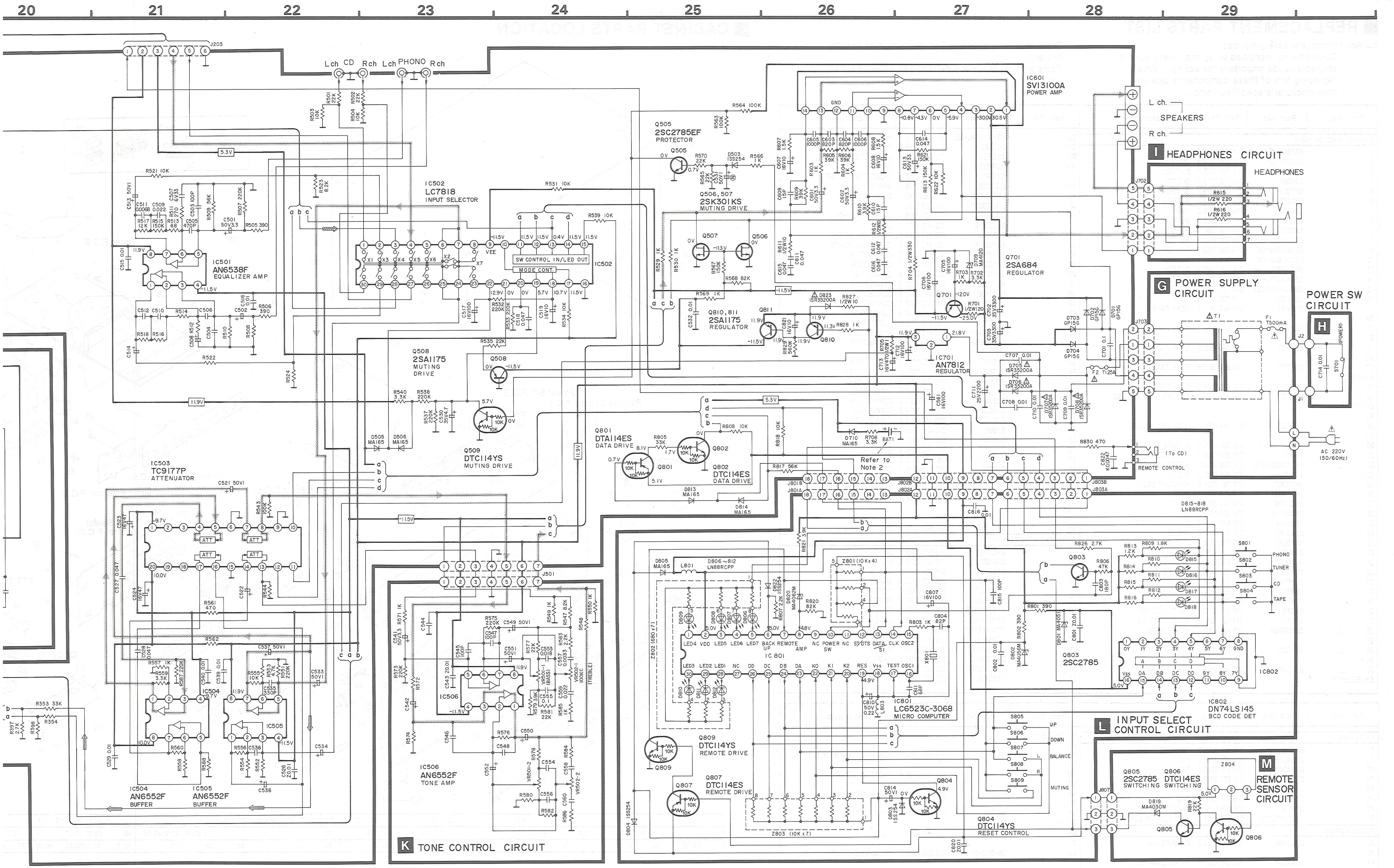
**VARNING:**
Detta litiumbatteri (av typ Nr. BR2325-1VC, tillverkad av Matsushita Battery Industrial Co., Ltd.) är en kritisk komponent. Var säker om att iakta korrekt polaritet och exakt läge av litiumbatteriet under ersättning och lödning av ersättningsbatteriet.

**ADVARSEL:**
Lithiumbatteriet er en vigtig komponent (type nr BR2325-1VC. Fremstillet af Matsushita Battery Industrial Co., Ltd.).
Husk rigtig polaritet og placering ved udskiftning og når De lodder det nye lithiumbatteri fast.


1
A
B
C
D
E
F
G
FM ANT
GND
AM ANT
AM LOOP ANT
L202
A ANTEN
TERMI
CIRCU


B TUNER CIRCUIT
A ANTENNA TERMINAL CIRCUIT
C INPUT SELECTOR CIRCUIT
D BAND SELECTOR CIRCUIT
FM ANT
GND
AM ANT
AM LOOP ANT
FM signal
Q201 2SC2787 RF AMP
Q202 2SC2786 MIXER
Q203 2SC3313 FM IF DET
FM ANT trimmer
FM IFT coil
MW ANT trimmer
LW ANT trimmer
MW ANT COIL
LW ANT COIL
MW OSC COIL
LW OSC COIL
MW/LW OSC
MW/LW signal
FM OSC
Q204,205 2SC2787 FMOSC / BUFFER
Q207 2SA1175 MWLW SELECTOR
Q213,214 2SA1175 AM FM SELECTOR
Q215,217 2SC2785 SWITHING
Q216 2SA1175 SWITHING
Q210,211 2SC2785 LOOP FILTER
Q212 2SC2785 FM.AM SWITHING
Q206,208,209 2SC2785 SWITHING
AM IFT coil
IC201 AN7273A FMIFDET & AM CON
AM OSC
MIX
AM/FM IF AMP
DET
AF AMP
FM MONO DISTORTION coil
FM MONO DISTORTION adj.
FM offset coil
TP201
TP202
TP203
TP204 (GND)
TP205
TP206
IC202 AN7420 FM MPX
Q220 2SC2785 BUFFER
IC202
MPX
PLL
MPX VCO adj.
Q218 2SC2785 MUTING
PL201 LCD LAMP
IC203 UPD1718G514 PLL CONTROLLER
Crystall oscillator (4.5MHz)
Power switch on
DIV 2us/0.1V
DIV 5ms/0.1V
Q219 2SA1175 SWITHING
LCD DISPLAY
LCD201
J201
J202
J203
J204
D219 SVGLB74UR3HL FM STEREO IND.
S204 : MEMORY
S205 : FM MODE
S206 : UP
S207 : DOWN
S209 : 8/16CH
S210 : 7/15CH
S211 : 6/14CH
S212 : 5/13CH
S213 : 4/12CH
S214 : 3/11CH
S215 : 2/10CH
S216 : 1/9 CH
S203 (LW)
S202 (MW)
S201 (FM)
1 2 3 4 5 6 7 8 9 10
A B C D E F G


E MAIN CIRCUIT
IC301 AN6558F DECK B PLAY BACK AMP
Q301,302 2SC2785 PLAY MUTE
Q303,304 2SC2785 ATS CONTROL
IC306 AN6552F REC/PLAY AMP
IC303 MN6634 PLAY BACK/REC SELECT
(DECK B) PLAYBACK HEAD L ch R ch
DECK B P.B.GAIN adj.(Lch)
DECK B P.B.GAIN adj.(Rch)
P.B. signal
Q409 2SA1175 REC/PLAY SELECT
P.B. GAIN adj.
TP307 (GND)
TP305 (Lch)
TP306 (Rch)
REC BIAS/CURRENT adj.
Q315~317 2SC1845 HAED SELECTOR
Q318,319 2SC2785
IC302 AN6558F DECK A PLAY BACK AMP
Q305,306 2SD1330 PLAY MUTE
DECK A P.B.GAIN adj.(Lch)
Q307,308 2SC2785 ATS CONTROL
IC304 MN6634 PLAYBACK/REC SELECT
(DECK A) R/P HEAD L ch R ch
REC signal
TP303 (Lch)
TP301 (Lch)
TP302 (Rch)
TP304
REC CURRENT adj.(Lch)
Q309,310 2SC2785 REC MUTE
REC BIAS adj.(Lch)
REC BIAS adj.(Rch)
REC BIAS /CURRENT adj.
DECK A P.B.GAIN adj. (Rch)
IC305 AN6552F REC AMP
Q405 2SD592A REC DET.
Q311,312 2SC2785 TAPE SELECT (Croz)
Q403,404 2SD592A BIAS OSC
REC CURRENT adj.(Rch)
(DECK A) ERASE HEAD
TP401
TP402 (GND)
ERASE CURRENT adj.
Q408 2SC2785EF P/R SELECTOR
Q407 2SC2785EF PLAYBACK/REC SELECTOR
Q406 2SA1175EF HEAD SELECTOR
Q412 2SC2785 DOLBY SELECT
Q411 2SC2785 SWITCHING
Q401,402 2SD1512 WDS SELECT
S402 (BEAT PROOF)
S384 (MOTOR) S382 (MUTING) S379 (ATS) S381 (REC) MOTOR
S385 (MOTOR) S383 (MUTING) S380 (ATS)
(DECK A) (DECK B)
J401 J402
IC61 TA7770N DOLBY NR
BIAS & SWITCH
F DOLBY NR CIRCUIT
J DOLBY SELECTOR CIRCUIT
(DOLBY NR) S401 ON OFF
IC503 TC9177P ATTENUATOR
IC504 AN6552F BUFFER
IC505 AN65 BUFFE
11.9V
-11.5V
12 13 14 15 16 17 18 19 20 21



20
21
22
23
24
25
26
27
28
29
J203
Lch CD Rch Lch PHONO Rch
IC601
SVI3100A
POWER AMP
L ch.
SPEAKERS
R ch.
I HEADPHONES CIRCUIT
HEADPHONES
J702
R615 1/2W 220
R616 1/2W 220
Q505
2SC2785EF
PROTECTOR
Q506, 507
2SK301KS
MUTING DRIVE
IC502
LC7818
INPUT SELECTOR
SW CONTROL IN/LED OUT
MODE CONT.
IC501
AN6538F
EQUALIZER AMP
Q508
2SA1175
MUTING DRIVE
Q509
DTC114YS
MUTING DRIVE
Q810, 811
2SA1175
REGULATOR
Q701
2SA684
REGULATOR
IC701
AN7812
REGULATOR
G POWER SUPPLY CIRCUIT
POWER SW CIRCUIT
H
(POWER)
S701
T1
F1 T500mA
F2 T1.25A
J703
J2
J1
AC 220V (50/60Hz)
Q801
DTA114ES
DATA DRIVE
Q802
DTC114ES
DATA DRIVE
Refer to Note 2
REMOTE CONTROL
(To CD)
BAT1
J801B
J801A
J802B
J802A
J803B
J803A
IC503
TC9177P
ATTENUATOR
ATT
J501
IC504
AN6552F
BUFFER
IC505
AN6552F
BUFFER
IC506
AN6552F
TONE AMP
VR501-1 (BASS)
VR502-1 100KC (TREBLE)
VR501-2
VR502-2
K TONE CONTROL CIRCUIT
IC801
LC6523C-3068
MICRO COMPUTER
Z801 (10K×4)
Z802 (680×7)
Z803 (10K×7)
D805 MA165
L801
D806~812 LN88RCPP
D815~818 LN88RCPP
LED4 VDD LED5 LED6 LED7 BACK UP REMOTE AMP NC POWER SW NC ST/DTS DATA CLK OSC2
LED3 LED2 LED1 NC DD DC DB DA K0 K1 K2 RES Vss TEST OSC1
Q803
2SC2785
IC802
DN74LS145
BCD CODE DET
S801 PHONO
S802 TUNER
S803 CD
S804 TAPE
S805 UP
S806 DOWN
S807 L
S808 BALANCE R
S809 MUTING
L INPUT SELECT CONTROL CIRCUIT
Q809
DTC114YS
REMOTE DRIVE
Q807
DTC114ES
REMOTE DRIVE
Q804
DTC114YS
RESET CONTROL
M REMOTE SENSOR CIRCUIT
Q805 2SC2785 SWITCHING
Q806 DTC114ES SWITCHING
Z804
J807
D819 MA4030M

# REPLACEMENT PARTS LIST

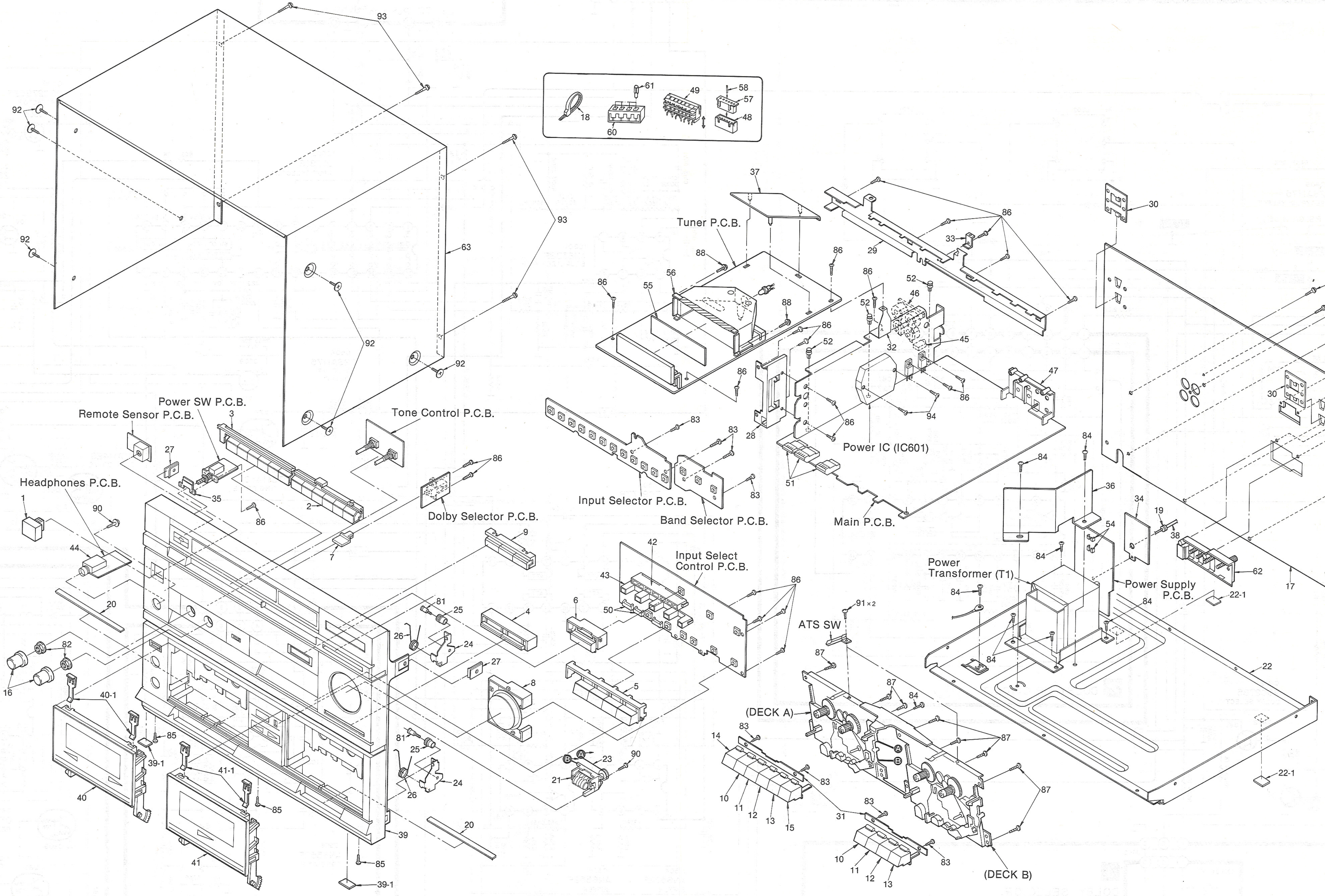
**Notes:** * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

| Ref. No. | Part No. | Part Code | Description |
|---|---|---|---|
| CABINET AND CHASSIS | | | |
| 1 | SBC666-1 | 016 702 6076 0 | BUTTON |
| 2 | SBC874-1D | 016 702 7074 8 | BUTTON |
| 3 | SBC874-2A | 016 702 7075 7 | BUTTON |
| 4 | SBC897 | 016 702 7014 0 | BUTTON |
| 5 | SBC925-1A | 016 702 6999 6 | BUTTON |
| 6 | SBC927 | 016 702 7017 7 | BUTTON |
| 7 | SBC928 | 016 702 6969 2 | KNOB |
| 8 | SBC929 | 016 702 6998 7 | BUTTON |
| 9 | SBC930F | 016 702 7066 8 | BUTTON |
| 10 | SBCAX800-KN6 | 016 702 7058 8 | BUTTON |
| 11 | SBCAX800-KN7 | 016 702 7059 7 | BUTTON |
| 12 | SBCAX800-KN8 | 016 702 7061 3 | BUTTON |
| 13 | SBCAX800-KN9 | 016 702 7063 1 | BUTTON |
| 14 | SBCAX800L-KE | 016 702 7096 2 | BUTTON |
| 15 | SBCAX800LKE1 | 016 702 7095 3 | BUTTON |
| 16 | SBN1221 | 016 700 1974 5 | KNOB |
| 17<br>EK | SGPF5A | 016 840 7811 8 | REAR PANEL |
| 17<br>E | SGPF5B | 016 840 7808 3 | REAR PANEL |
| 17<br>XL | SGPF5C | 016 840 7809 2 | REAR PANEL |
| 17<br>EH, EB, EF | SGPF5D | 016 840 7810 9 | REAR PANEL |
| 18 | SHR301 | 016 645 0044 0 | CLAMPER |
| 19<br>EH, EB, EF, E,<br>XL | SHR127 | 016 645 0037 9 | SPACER, POWER CORD |
| 19<br>EK | SHR129 | 016 645 0038 8 | BUSHING, AC CORD |
| 20 | SHGF4 | 016 653 1100 9 | RUBBER SPACER |
| 21 | SJNF1 | 016 892 0130 4 | TAPE COUNTER |
| 22 | SKUAX800L-KE | 016 802 2196 2 | BOTTOM BOARD |
| 22-1 | SKL293 | 016 828 0269 8 | RUBBER |
| 23 | SMQ20021 | 016 754 0064 8 | ANGULAR BELT |
| 24 | SMQ30030 | 016 650 5149 1 | ANGLE |
| 25 | SMQ4096 | 016 745 0063 0 | GEAR |
| 26 | SMQ60026 | 016 726 0969 4 | SPRING |
| 27 | SNE4064 | 016 846 3442 9 | U NUT(BRACKET) |
| 28 | SUW3063 | 016 650 5357 5 | ANGLE |
| 29 | SUW3070 | 016 650 5359 3 | ANGLE |
| 30 | SUW3007 | 016 650 5211 2 | ANGLE |
| 31 | SUW2995 | 016 650 5182 0 | BRACKET |
| 32 | SUWF15 | 016 650 5403 6 | BRACKET |
| 33 | SUWF16 | 016 650 5406 3 | BRACKET |
| 34 | SUWF17-2 | 016 650 5404 5 | BRACKET |
| 35 | SUWF18 | 016 650 5405 4 | BRACKET |
| 36 | SMCF8 | 016 601 0643 7 | SHIELD COVER |
| 37 | SMCF7 | 016 601 0644 6 | SHIELD COVER |
| 38 ⚠<br>EK | QFC1205M | 003 490 0928 5 | POWER CORD |
| 38 ⚠<br>XL | SJAG23 | 003 490 1056 4 | POWER CORD |
| 38 ⚠<br>EH, EB, EF, E | SJA138-3 | 003 490 2575 2 | POWER CORD |
| 39 | SGYAX800L-KE | 016 840 7812 7 | FRONT PANEL (K) |
| 39-1 | SKL293 | 016 828 0269 8 | RUBBER |
| 40 | SYEF3 | 016 652 0851 6 | CASSETTE HOLDER |
| 40-1 | QBP2006A | 015 727 0706 8 | SPRING |
| 41 | SYEF4 | 016 652 0852 5 | CASSETTE HOLDER |
| 41-1 | QBP2006A | 015 727 0706 8 | SPRING |
| 42 | LN078396P | 001 033 0156 0 | DIODE, GAASP |
| 43 | LN048393P | 001 033 0155 1 | LED ASS'Y |
| 44 | SJJ63E | 003 400 4329 0 | JACK, HEADPHONE |
| 45 | SJJ130-2 | 003 400 7317 2 | JACK |
| 46 | SJF4442 | 003 410 5983 6 | TERMINAL BOARD |
| 47 | SJF8511N | 003 410 8209 5 | TERMINAL PLATE |
| 48 | SJT3213 | 003 410 6011 5 | CONNECTOR |
| 48 | SJT3319 | 003 403 3892 7 | CONNECTOR |
| 48 | SJT3611 | 003 410 6000 8 | CONNECTOR |
| 48 | SJT3709 | 003 403 4232 3 | CONNECTOR |
| 48 | SJT3809 | 003 410 6013 3 | CONNECTOR |
| 49 | SJT30540LX-V | 003 410 5996 1 | CONNECTOR |
| 49 | SJT30640LX-V | 003 410 6149 8 | CONNECTOR |
| 49 | SJT31143-V | 003 410 7732 5 | LUG TERMINAL |
| 50 | SJT30647WL | 003 410 8132 9 | CONNECTOR |
| 51 | SJS50680WL | 003 403 7235 8 | CONNECTOR |
| 52 | SHR9094 | 016 640 0048 1 | LATCH |
| 53 | SMC1077 | 016 601 0037 3 | INSULATOR |
| 54 | SJT390 | 003 410 7350 5 | FUSE HOLDER |
| 55 | SDU296A | 016 842 1393 9 | LCD FILTER |
| 56 | SMP409 | 016 632 1787 5 | LAMP CASE |
| 57 | SJS5215 | 003 400 5923 4 | CONNECTOR |
| 57 | SJS5331 | 003 400 5924 3 | CONNECTOR |
| 57 | SJS5629 | 003 400 5917 2 | CONNECTOR |
| 57 | SJS5811 | 003 400 5930 5 | CONNECTOR |
| 58 | SJT783 | 003 410 6001 7 | CONTACT |
| 60 | SJS5715 | 003 400 6034 4 | SOCKET(7P) |
| 60 | SJS5717 | 003 400 6573 2 | SOCKET |
| 61 | SJT785 | 003 410 6015 1 | CONTACT |
| 62<br>(XL) | SJF4441-1 | 003 410 7297 3 | TERMINAL BOARD |
| 62<br>(EK, EH, EB)<br>(EF, E) | SJF4441-4 | 003 410 7298 2 | TERMINAL BOARD |
| 63 | SKCAX800-KN | 016 800 3074 7 | CABINET ASS'Y |
| SCREWS.WASHERS & NUTS | | | |
| 81 | SNE2120 | 005 500 5609 8 | SCREW |
| 82 | SNE4021 | 005 507 0372 5 | NUT |
| 83 | XTS3+10J | 005 501 2755 6 | SCREW |
| 84 | XTB3+6F | 005 501 2687 1 | SCREW |
| 85 | XTB3+8J | 005 501 1535 0 | SCREW |
| 86 | XTB3+10J | 005 501 2076 2 | SCREW |
| 87 | XTB3+10GFR | 005 501 3126 5 | SCREW |
| 88 | XTWS3+10Q | 005 501 2293 5 | SCREW |
| 89 | XTW3+12TFZ | 005 501 4794 1 | SCREW |
| 90 | XTWS3+8T | 005 501 3311 6 | SCREW |
| 91 | XYA2+CF8 | 005 503 1272 4 | SCREW |
| 92 | SNE2095-5 | 005 500 4884 5 | CABINET |
| 93 | XTW3+12TFZ | 005 501 4794 1 | SCREW |
| 94 | XTB3+16J | 005 501 2648 8 | SCREW |

| Ref. No. | Part No. | Part Code | Description |
|---|---|---|---|
| PACKINGS | | | |
| P1 | SPGF9 | 016 971 5064 7 | PACKING CASE |
| P2 | SPS4946-1 | 016 977 3291 6 | PAD |
| P3 | SPS4947-1 | 016 977 3292 5 | PAD |
| P4 | SPS4948 | 016 977 3282 7 | PAD |
| P5 | SPS4949-1 | 016 977 3293 4 | PAD |
| P6 | SPSF13 | 016 977 3326 2 | PAD |
| P7 | SPHF3 | 016 979 0392 4 | PACKING SHEET |
| P8 | XZB70X70C02 | 016 978 0534 3 | PROTECTION COVER |
| ACCESSORIES | | | |
| A1<br>XL | SSA269M | 002 390 1558 2 | FM ANTENNA |
| A1<br>EK, EH, EB, EF,<br>E | SSA270M | 002 390 1568 0 | FM ANTENNA CORD |
| A2<br>XL | SQFF10 | 016 983 5200 1 | INSTRUCTION BOOK |
| A2<br>EF | SQFF11 | 016 983 5192 4 | INSTRUCTION BOOK |
| A2<br>EK | SQFF8 | 016 983 5193 3 | INSTRUCTION BOOK |
| A2<br>EH, EB, E | SQFF9 | 016 983 5199 7 | INSTRUCTION BOOK |
| A3<br>EK | SJP9009 | 003 492 5594 7 | PLUG |
| A4 | UM-3NE-2P | 016 955 0025 6 | PRIMARY BATTERY |

# CABINET PARTS LOCATION


Power SW P.C.B.
Remote Sensor P.C.B.
Tone Control P.C.B.
Headphones P.C.B.
Dolby Selector P.C.B.
Tuner P.C.B.
Input Selector P.C.B.
Band Selector P.C.B.
Main P.C.B.
Power IC (IC601)
Input Select Control P.C.B.
ATS SW
Power Transformer (T1)
Power Supply P.C.B.
(DECK A)
(DECK B)
91×2
Ⓐ
Ⓑ
93
92
63
3
27
35
86
2
7
1
90
44
20
82
16
40-1
40
39-1
85
41-1
41
39
9
81
25
26
24
4
6
27
8
5
21
23
43
50
42
18
60
61
49
58
57
48
37
88
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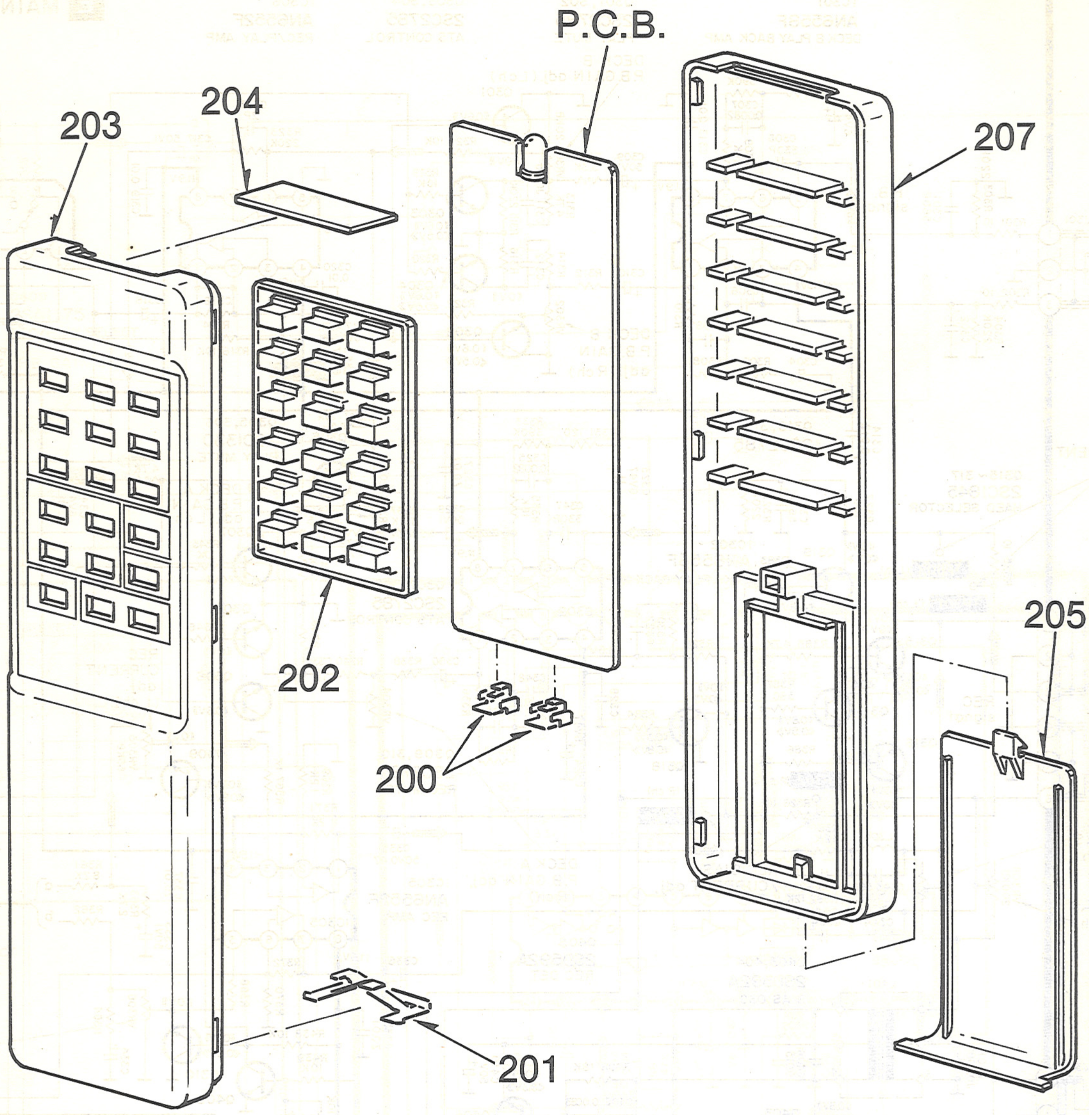
55
52
46
45
32
28
83
51
94
47
29
33
30
89
84
36
34
19
38
54
62
17
22
22-1
87
14
10
11
12
13
15
31

|  |
|---|
| 16 1 20 27 3 2 7 26 26 25 25 24 24 20 27 9 4 8 21 18 6 23 5 14 10 11 28 12 13 15 31 10 11 29 12 32 13 30 19 22-1 22 30 22-1 17 |
| 44 40 40-1 39-1 41 35 41-1 39-1 39 63 43 60 50 61 55 42 56 49 58 57 48 37 51 52 52 52 46 33 45 47 36 54 34 38 |
| 92 92 82 90 85 86 85 92 93 85 81 81 92 86 93 86 90 83 88 83 86 83 83 88 86 87 86 83 86 86 91 86 83 87 84 94 83 84 86 84 86 87 84 84 87 84 84 62 89 89 |

- **Remote-Control Transmitter**



## REPLACEMENT PARTS LIST

| Ref. No. | Part No. | Part Code | Description |
|---|---|---|---|
| I.C. (REMOTE CONTROL) | | | |
| IC1001 | MN6013M | | INTEGRATED CIRCUIT |
| TRANSISTORS (REMOTE CONTROL) | | | |
| Q1001 | UN1231 | 001 030 5092 4 | TRANSISTOR |
| DIODES (REMOTE CONTROL) | | | |
| D1001 | LN66-S | 001 032 3730 5 | L.E.D |
| COIL (REMOTE CONTROL) | | | |
| L1001 | ELEA101JA | 001 211 2986 0 | COIL |
| OSCILLATOR (REMOTE CONTROL) | | | |
| X1001 | CSB420PB1 | 001 030 0013 9 | 420 KHZ |
| RESISTORS (REMOTE CONTROL) | | | |
| R1001 | ERDS2TJ1R0 | 001 152 2419 4 | CARBON, 1Ω, 1/4W |
| CAPACITORS (REMOTE CONTROL) | | | |
| C1001, C1002 | ECKD1H101KB | 001 103 1412 0 | CERAMIC, 100PF, 50V |
| C1003 | ECEA0GK101 | 001 120 2620 3 | ELECTROLYTIC CAPACITOR |
| REMOTE CONTROL TRANSMITTER | | | |
| 200 | UR50TD460 | 003 410 8068 0 | BATTERY TERMINAL |
| 201 | UR52TD101 | 003 413 1406 5 | TERMINAL (COMMON) |
| 202 | UR64CT266H | 016 653 1214 0 | RUBBER PLATE |
| 203 | SYWX800LRMKE | 016 800 3151 1 | CABINET BODY |
| 204 | UR52SB327 | 016 842 1591 5 | FILTER |
| 205 | UR64EC264 | 016 820 0595 7 | BATTERY COVER |
| 207 | SYUX800LRMKE | 016 802 2203 0 | BOTTOM BOARD |

Printed in Japan
H870406200 YY/IM

ORDER NO. HAD8704073C8-A

# LW/MW/FM STEREO
# DOUBLE CASSETTE RECEIVER

## DEUTSCH

Verwenden Sie bitte diese Broschüre Zusammen mit der Service-Anieitung für das Modell Nr. SA-X800L.

## ■ MESSUNGEN UND JUSTIERUNGEN

### • LW/MW/FM

**Einstellungen der Bedienelemente und zu verwendende Geräte.**
- MW/UKW-Meßsender (MW/UKW-MS)
- Stereo-Modulator
- Verzerrungs-Analystator
- Oszilloskop
- Elektronische Wechselstrom- und Gleichstrom-Voltmeter (EVM).
- Frequenzzähler
- Drosselspule (100 µH)
- Widerstand (100 kΩ)
- Keramischer Kondensator (200 pF)

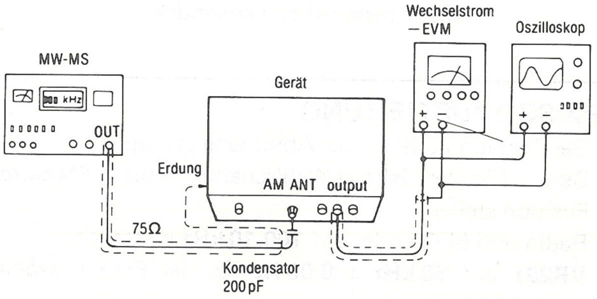
**Anmerkung:** Für **T202 (MW-ZFT)**, **L210 (MW-OSZ,-Spule)** und **L211 (LW-OSZ,-Spule)**, werdeven justiert Ersatzteil geliefert.
Dien Kern dieses Teils daher nicht drehen.

### MW-HF-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "**MW**" einstellen.
3. Radio und Signalgenerator auf **612 kHz** einstellen.
4. **L208** auf maximale Ausgangsleistung abgleichen.
5. Radio und Signalgenerator auf **1503 kHz** einstellen.
6. **CT202** auf maximale Ausgangsleistung abgleichen.
7. Die Schritte 3.~6. wiederholen.

**Anmerkung:**
Der Antenneneingang-Signalpegel muß so niedrig wie möglich und frei von automatischer Verstärkungsregelung (AGC) sein.

ZUSTAND DES MW-MESSENDERS
Modulation................................30%
Modulationsfrequenz...............400 Hz

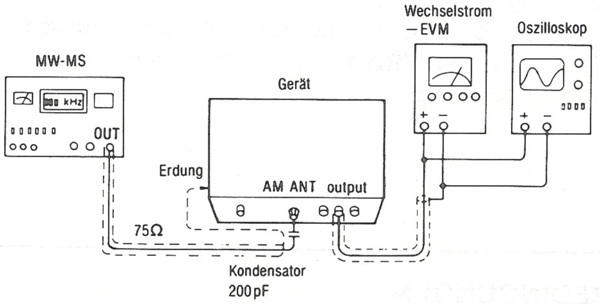


### LW-HF-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "**LW**" einstellen.
3. Die Radiofrequenzanzeige und den Meßsender auf **155 kHz** einstellen.
4. **L209** auf maximale Ausgangsleistung abgleichen.
5. Die Radiofrequenzanzeige und den Meßsender auf **353 kHz** einstellen.
6. **CT203** auf maximale Ausgangsleistung abgleichen.
7. Die Schritte 3.~6. wiederholen.

**Anmerkung:**
Der Antenneneingang-Signalpegel muß so niedrig wie möglich und frei von automatischer Verstärkungsregelung (AGC) sein.

ZUSTAND DES MW-MESSENDERS
Modulation................................30%
Modulationsfrequenz...............400 Hz

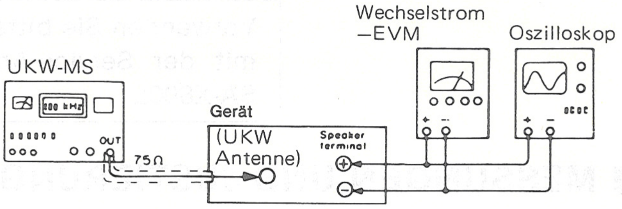


## UKW-HF-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf **"FM"** einstellen.
3. Die Radiofrequenz-Anzeige und den Meßsender auf **100.10 MHz** einstellen. Ein schwaches Signal eingeben, so daß in der Ausgangswellenform Rauschen enthalten ist.
4. **CT201** und **T201** so justieren, daß die Ausgangswellenform vertikal symmetrisch ist.

**Anmerkung:** Da drei Ausgangsmeßwerte vorhanden sein serden, sind die Justierungen bei der Mittenfrequenz vorzunehmen.

ZUSTAND DES UKW-MESSENDERS
Modulation . . . . . . . . . . . . . 100%
Modulationsfrequenz . . . . . 1 kHz
Ausgangspegel . . . . . . . . . . . 66 dB

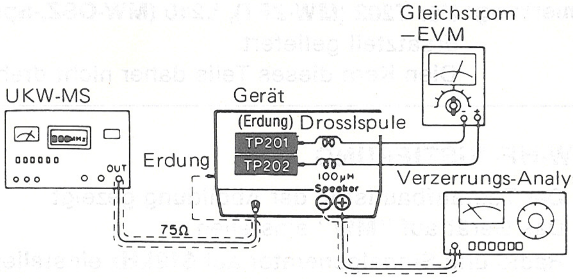

Wechselstrom
–EVM
Oszilloskop
UKW-MS
800 kHz
OUT
75Ω
Gerät
(UKW
Antenne)
Speaker terminal
⊕
⊖

## UKW-MONO-VERZERRUNGS-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf **"FM"** einstellen.
3. Die Radiofrequenzanzeige und den Meßsender auf **100,10 MHz** einstellen.
4. **Den Kern von T203 so justieren, daß die im Signalzustand gemessene Spannung 0 mV (0 ± 30 mV) im 300 mV Bereich beträgt.**
5. **T204** so justieren, daß der Verzerrugsfaktor des linken Kanals minimal wird.
6. Schritte 4 und 5 einige Male wiederholen.
7. Überprüfen, daß die Verzerrungsfaktoren des linken und rechten Kanals fast gleich sind.

**Anmerkung:** Für die Justierung ist ein Schraubendreher aus Kunststoff zu verwenden.

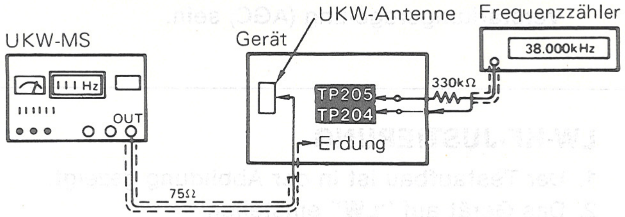
ZUSTAND DES UKW-MESSENDERS Verzerrungs-Analysator
Modulation . . . . . . . . . . . . . . . 100%
Modulationsfrequenz . . . . . . . 1 kHz
Ausgangspegel . . . . . . . . . . . . . 66 dB


Gleichstrom
–EVM
UKW-MS
Gerät
(Erdung) Drosslspule
TP201
TP202
Erdung
OUT
100µH
Speaker
⊖⊕
75Ω
Verzerrungs-Analysator

## MPX-SGO-JUSTIERUNG

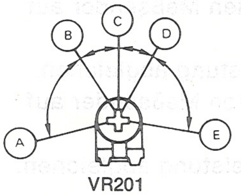
1. Der Testaufbau ist in der Abbildung gezeigt.
2. Den UKW-Bertriebsart-Wahlschalter indie **"FM/auto"**-Position stellen.
3. Radio und Meßsender auf **100.10 kHz** einstellen.
4. **VR201** auf **38 kHz ± 0.05 Hz** auf der Frequenzzähleranzeige justieren.

ZUSTAND DES UKW-MESSENDERS
Modulation . . . . . . . . . . .0% (mon-modulation)
Ausgangspegel . . . . . . . . .66 dB


UKW-Antenne
Frequenzzähler
38.000 kHz
UKW-MS
Gerät
111 Hz
OUT
TP205
TP204
330kΩ
Erdung
75Ω

## ★ VERWENDUNG EINES ALTERNATIV-SYSTEMS

1. Stereosignal vom Meßsender eingeben oder eine Stereo-Sendung empfangen.
2. **VR201** justieren, bis die Stereo-Anzeige aufleuchtet. Den Arm von **VR201** mit Lack sichern, wie in der Abbildung gezeigt.


B
C
D
A
E
VR201

Ⓐ – Ⓑ Ⓓ – Ⓔ : Stereo AUS Position
Ⓑ – Ⓓ : Stereo EIN Position (Anzeige leuchtet)
Ⓒ : Punkt der Pilorschaltung justieren

## MEßBEDINGUNGEN

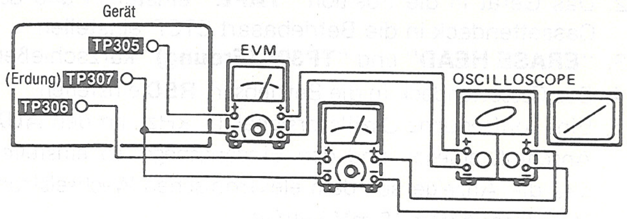
- Überprüfen, ob die köpfe sauber sind.
- Überprüfen, ob die Bandantriebsachse und die Andruckrolle sauber sind.
- Dolby-Schalter: **"OFF"**

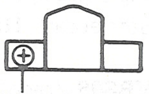
## TEST BAND

- Koptazimut-Justierung (8 kHz, –20 dB); QZZCFM
- Justierung der Bandgeschwindigkeit (3 kHz, –10 dB), QZZCWAT
- Normales Referenz-Leerband; QZZCRA
- $CrO_2$-Referenz-Leerband; QZZCRX

## KOPFAZIMUT-JUSTIERUNG (DECK A/B)

1. Die Anschlußverbindungen für die Testgeräte sind in Abbildung gezeigt.
2. Den Azimut-Justierungsteil (8 kHz, −20 dB) des Testbandes (QZZCFM) wiedergeben und die Winkeljustierungs-Einstellschraube so verstellen, daß der Ausgang vom linken und rechten Kanal maximal wird. (Wenn die Justierpositionen für den linken und rechten Kanal verschieden sind, ist eine Position zu finden, wo der Ausgang des linken und rechten Kanals ausgeglichen ist, und dann ist die Justierung durchzuführen.)
3. Gleichzeitig eine Lissajous-Wellenform ziehen und Phasenablenkung eliminieren.
4. Nach erfolgter Justierung sind die Bandführungs-Höhen- und-Winkeljustierschrauben zu sichern.

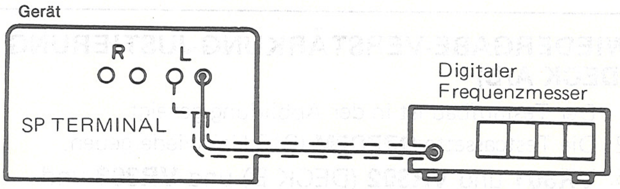

Gerät
TP305
(Erdung) TP307
TP306
EVM
OSCILLOSCOPE


AZIMUTH SCHRAUBE

## BANDGESCHWINDIGKEITS-JUSTIERUNG (DECK A/B)

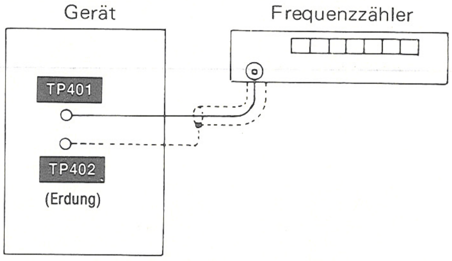
1. Der Testaufbau ist in Abbildung gezeigt.
2. Das Gerät auf **"TAPE"** einstellen.
3. Den mittleren Teil des Testbandes (QZZCWAT) Wiedergeben.
4. Den Drehwiderstand im Motor so justieren. Daß die Ausgangsleistung dem Standard -Wert entspricht.

**Standard-West: 3000 ± 20 Hz**


Gerät
R
L
SP TERMINAL
Digitaler
Frequenzmesser

## VORMAGNETISIERUNGS-OSZILLATIONS-JUSTIERUNG (DECK A)

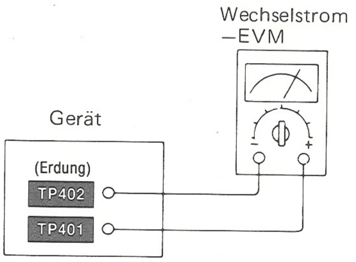
1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät in die Position "**TAPE**" einstellen.
3. Das Cassettendeck auf Betriebsart **REC** einstellen. (QZZCRA)
4. **L401** auf eine Anzeige von **95—100kHz** auf dem Frequenzmesser einstellen.


Gerät
Frequenzzähler
TP401
TP402
(Erdung)

## LÖSCHSTROMS-JUSTIERUNG (DECK A)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät in die Position "**TAPE**" einstellen.
3. Das Cassettendeck in die Betriebsart **REC** einstellen. (QZZCRA)
4. **VR401** auf eine Anzeige **70±5mV** dem elektronischen Wechselstrom-Voltmeter einstellen.

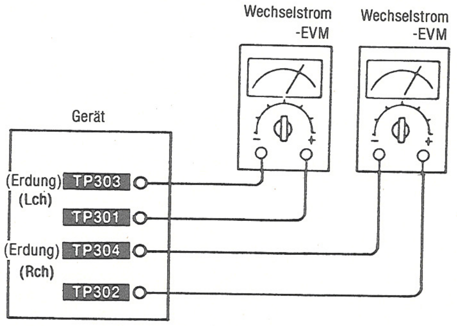
**Standardwert: Normalband Mehrals 70±5mV**
**$CrO_2$-Band Mehrals 80mV**


Wechselstrom
−EVM
Gerät
(Erdung)
TP402
TP401

## AUFNAHME-VORMAGNETISIERUNG-JUSTIERUNG (DECK A)

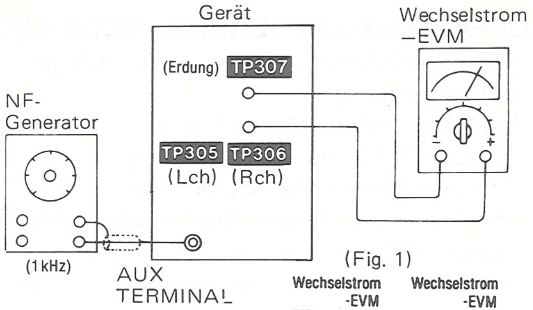
1. Der Testaufbau ist in der Abbildlung gezeigt.
2. Das Gerät in die Position **TAPE** einstellen.
3. Das Cassettendeck in die Betriebsart **REC** einstellen. (QZZCRA)
4. **VR307** (linker Kanal) und **VR308** (rechter Kanal) auf eine Anzeige von **4,8±0,1mV** auf dem elektronischen Wechselstrom-Voltmeter einstellen.

**Standardwert: Normalband 4,8±0,1mV**
**$CrO_2$-Band 5—8,0mV**

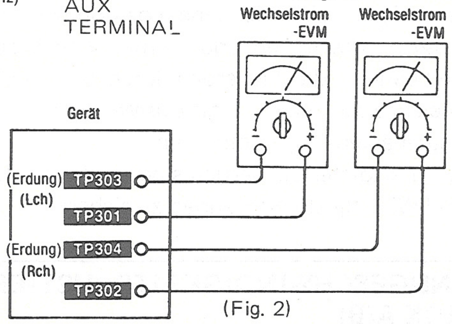

Wechselstrom
-EVM
Wechselstrom
-EVM
Gerät
(Erdung) TP303
(Lch)
TP301
(Erdung) TP304
(Rch)
TP302

## AUFNAHMESTROMS-JUSTIERUNG (DECK A)

1. Der Testaufbau ist in Abbildung 2 gezeigt.
2. Das Gerät in die Position "**TAPE**" einstellen und das Cassettendeck in die Betriebasart STOP einstellen.
3. "**ERASE HEAD**" und "**TP307 (Erdung)**" kurzschießen.
4. Das Cassettendeck in die Betriebsart **REC** einstellen.
5. Ein Tonfrequenz-Oszillatorsignal (1 kHz) an den **AUX**-Anschluß anlegen und den Eingangspegel so einstellen, daß die Anzeige auf dem elektronischen Wechselstrom-Voltmeter **410** ± **10 mV** beträgt.
6. Der Testaufbau ist in Abbildung 2 gezeigt.
7. Das Cassettendeck in die Betriebsart **REC** einstellen. (QZZCRA)
8. **VR305** (linker Kanal) und **VR306** (rechter Kanal) auf eine Anzeige von **0,38** ± **0,01 mV** auf dem elektronischen Wechselstrom-Voltmeter einstellen.


Gerät
Wechselstrom
–EVM
NF-
Generator
(Erdung) TP307
TP305 TP306
(Lch) (Rch)
(1 kHz)
AUX
TERMINAL

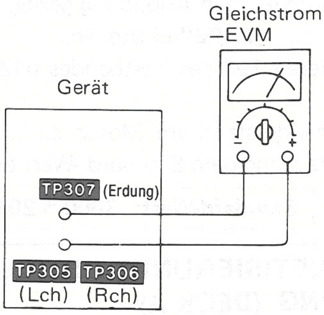
(Fig. 1)


Wechselstrom
-EVM
Wechselstrom
-EVM
Gerät
(Erdung) TP303
(Lch)
TP301
(Erdung) TP304
(Rch)
TP302

(Fig. 2)

## WIEDERGABE-VERSTÄRKUNG-JUSTIERUNG (DECK A/B)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Die Testcassette **QZZCFM** (315 Hz) wiedergeben.
3. **VR301** und **VR302** (DECK B) und **VR303** und **VR304** (DECK A) auf eine Anzeige von **410** ± **10 mV** auf dem elektronischen Voltmeter einstellen.


Gleichstrom
–EVM
Gerät
TP307 (Erdung)
TP305 TP306
(Lch) (Rch)

# FRANCAIS

Ceci est à utiliser conjointement avec le manuel d'entretien du modèle No. SA-X800L.

## MESURAGES ET REGLAGES

- **LW/MW/FM**

**Positionnements des commandes et équipement utilisé.**

- Générateur de signaux M.F. et A.M. (AM et FM-SG).
- Modulateur stéréophonique
- Analyseur de distorsion
- Oscilloscope
- Voltmètre électronique à C.A. et C.C. (EVM).
- Compteur de fréquence
- Bobine d'amortissement d'arrêt (100µH)
- Résistance (100kΩ)
- Condensateur céramique (200pF)

**Nota:** Pour **T202 (MW.** F.I.), **L210** (bobine oscil. de **MW** et **L211** (bobine Oscil. de **LW**) des éléments réglés sont fournis. Aussi, ne pas tourner les noyaux de ces pièces.

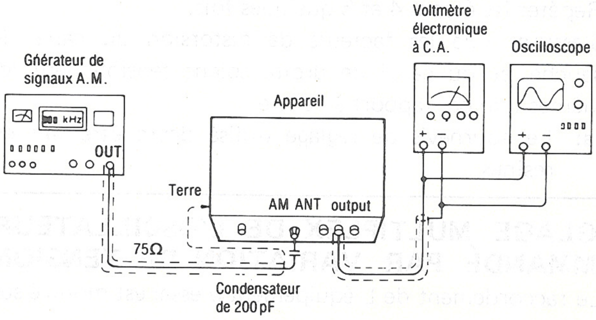
### REGLAGE DE O.M.-H.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "**MW**".
3. Régler le cadran radio et le générateur de signaux sur **612kHz.**
4. Régler **L208** pour une sortie maximale.
5. Régler le cadran radio et le générateur de signaux sur **1503kHz.**
6. Régler **CT202** pour une sortie maximale.
7. Répéter les étapes 3.~6.

**Nota:**

Le niveau d'entrée d'antenne doit être aussi bas que possible étant libéré de la commande automatique de gain.

CONDITION DU GENERATEUR DE SIGNAUX A.M.
Modulation................................30%
Fréquence de modulation .......400Hz


Voltmètre électronique à C.A.
Oscilloscope
Gńérateur de signaux A.M.
kHz
OUT
Appareil
Terre
AM ANT
output
75Ω
Condensateur de 200pF

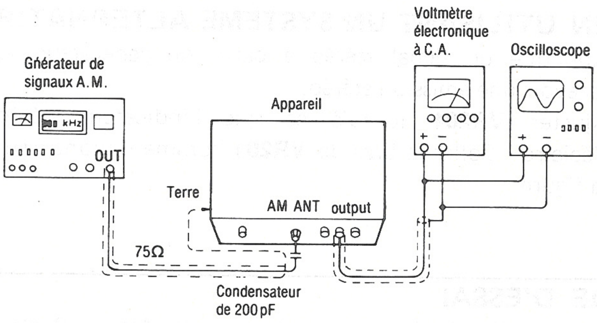
### REGLAGE DE RE-LW

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "**LW**".
3. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **155kHz.**
4. Régler **L209** pour une sortie maximale.
5. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **353kHz.**
6. Régler **CT203** pour une sortie maximale.
7. Répéter les étapes 3.~6.

**Nota:**

Le niveau d'entrée d'antenne doit être aussi bas que possible étant libéré de la commande automatique de gain.

CONDITION DU GENERATEUR DE SIGNAUX A.M.
Modulation................................30%
Fréquence de modulation .......400Hz

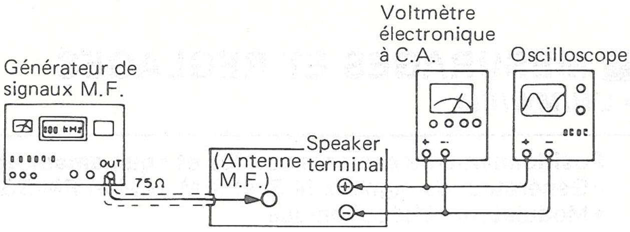

Voltmètre électronique à C.A.
Oscilloscope
Gńérateur de signaux A.M.
kHz
OUT
Appareil
Terre
AM ANT
output
75Ω
Condensateur de 200pF

## REGLAGE DE M.F.-H.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position **"FM"**.
3. Régler le cadran radio et le générateur de signaux sur **100.10 MHz**. Ajouter une faible entrée de telle sorte que le bruit erratique soit inclut dans la forme d'onde de sortie.
4. Ajuster **CT201** et **T201** de telle sorte que la forme d'onde de sortie soit verticalement symétrique.

**Nota:** Du fait que trois lectures de sortie seront présentes, les ajustements devront être faits à la fréquence nominale.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation . . . . . . . . . . . . . 100%
Fréquence de modulation . . . 1 kHz
Niveau de sortie . . . . . . . . . . 66 dB

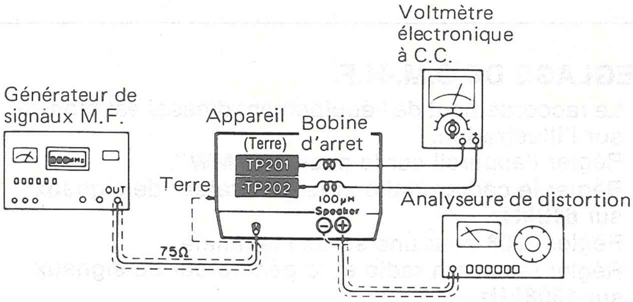

Voltmètre électronique à C.A.
Oscilloscope
Générateur de signaux M.F.
OUT
75Ω
(Antenne M.F.)
Speaker terminal

## REGLAGE DE DISTORSION MONOPHONIQUE M.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position **"FM" (M.F.).**
3. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **100,10 MHz**.
4. Régler le noyau de **T203** de telle sorte que la tension mesurée sur le mode de signaux soit de **0 mV** (0 ± 30 mV) dans une plage de 300 mV.
5. Ajuster **T204** de telle que le facteur de distorsion du nal de gauche soit minimisé.
6. Répéter les étapes 4 et 5 quelques fois.
7. S'assurer que les facteurs de distorsion du canal de gauche et du canal de droite soient sensiblement les mêmes l'un par rapport à l'autre.

**Nota:** Le tournevis de réglage utilisé devra être fait en résines.

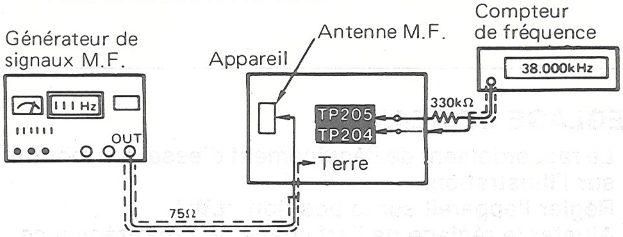
CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation . . . . . . . . . . . . . . .100%
Fréquence de modulation . . .1 kHz
Niveau de sortie . . . . . . . . . . .66 dB


Voltmètre électronique à C.C.
Générateur de signaux M.F.
Appareil
Bobine d'arret
(Terre)
TP201
TP202
Terre
OUT
100μH
Speaker
Analyseure de distortion
75Ω

## REGLAGE MULTIPLEX DE L'OSCILLATEUR COMMANDÉ PAR VARIATION DE TENSION

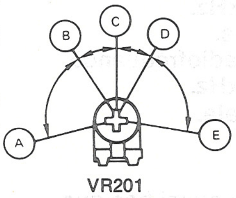
1. Le raccordement de L'équipement d'essai est montré sur la figure.
2. Régler l'appareil sur la position **"FM-auto"**.
3. Régler le cadran radio et le générateur de signaux sur **100,10 MHz**.
4. Ajuster **VR201** pour **38 kHz ± 0,05 Hz** sur le compteur de lecture de fréquences.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation . . . . . . . . . . 0% (mon-modulation)
Niveau de sortie . . . . . . 66 dB


Générateur de signaux M.F.
Antenne M.F.
Compteur de fréquence
38.000kHz
Appareil
111Hz
OUT
TP205
TP204
330kΩ
Terre
75Ω

## ★ EN UTILISANT UN SYSTÈME ALTERNATIF

1. Applique un signal stéréo à partir du générateur ou recevoir une émission stéréo.
2. Ajuster **VR201** jusqu'à ce que l'indicateur stéréo s'éciaire. Coller le bras de **VR201** comme il montré sur la figure.


A
B
C
D
E
VR201

Ⓐ – Ⓑ Ⓓ – Ⓔ : Position de HORS CIRCUIT "Stéréo".
Ⓑ – Ⓓ : Position de MISE EN CIRCUIT "Stéréo". (Eclairage de l'indicateur)
Ⓒ : Point de réglage du circuit pilote.

## BANDE D'ESSAI

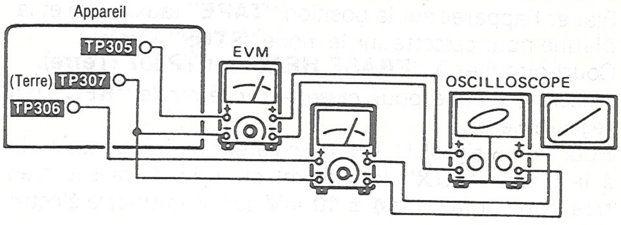
- Réglage de l'angle des tetes de lecture (8 kHz, –20 dB), QZZCFM
- Réglage de la vitesse de défilement de la bande (3 kHz, –10 dB); QZZCWAT
- Interrupter de réduction de bruit: **"OFF"**

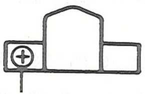
## CONDITIONS POUR LE MESURAGE

- S'assurer que les têtes soient propres.
- S'assurer que le cabestan les galets-presseurs soient propres.
- Bande vierge de référence normale; QZZCRA
- Bande vierge de référence CrO$_2$; QZZCRX

## RÉGLAGE DE L'ANGLE DES TÊTES DE LECTURE (DECK A/B)

1. Le raccordement de L'équipement d'essai est montré à la figure de droite.
2. Faire jouer la partie réglée azimutale (8 kHz, –20 dB) de la bande d'essai (QZZCFM) et. régler la vis de mise au point azimutale de telle sorte que les puissances de sortie du canal de gauche et du canal de droite soient au maximum. (Si les positions de réglage du canal de gauche et du canal de droite sont différentes, trouver une position où les puissances de sortie des canaux de gauche et de droite soient équilibrées, puis effectuer la mise au point.)
3. En même temps, établir une forme d'onde de Lissajous et éliminer la déviation de phase.
4. Après le réglage, bloque les vis du réglage angulaire et de la hauteur des guides de bande.

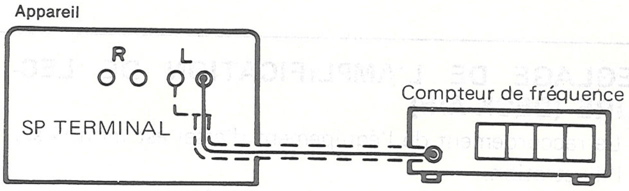

Appareil
TP305
(Terre) TP307
TP306
EVM
OSCILLOSCOPE


Vis d'azimutage

## REGLAGE DE LA VITESSE DE DÉFILEMENT DE LA BANDE (DECK A/B)

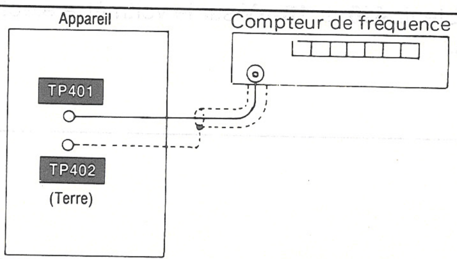
1. Le raccordement de l'equipement d'essai est montré à la figure de droite.
2. Régler l'appareil sur la position **"TAPE"**.
3. Faire jouer la partie centrale de la bande d'essai (QZZCWAT).
4. Régler VR dans le moteur de telle sorte que la puissance de sortie soit en deçà de la normale.

**Valeur normalisée: 3000 ± 20 Hz**


Appareil
R
L
SP TERMINAL
Compteur de fréquence

## REGLAGE DE L'OSCILLATION DE POLARISATION (DECK A)

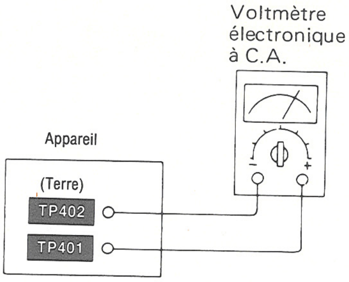
1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Placer l'appareil sur la position **"TAPE"** (bande).
3. Placer la platine pour cassette sur le mode **"REC"** [enregistrement (QZZCRA)].
4. Ajuster **L401** pour obtenir une lecture de **95—100kHz** sur le compteur de fréquences.


Appareil
Compteur de fréquence
TP401
TP402
(Terre)

## REGLAGE DU COURANT D'EFFACEMENT (DECK A)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Placer l'appareil sur la position **"TAPE"** (bande).
3. Placer la platine pour cassette sur le mode **"REC"** [enregistrement (QZZCRA)].
4. Ajuster **VR401** pour obtenir **70±5mV** sur le voltmètre électronique.

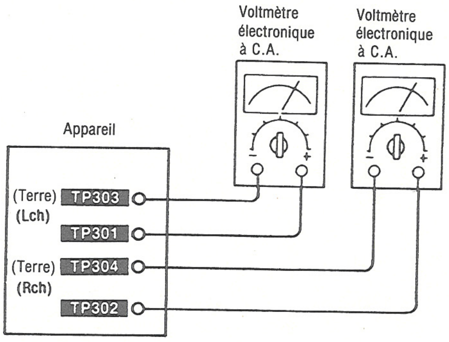
| | | |
|---|---|---|
| **Valeur standard:** | **Bande normale** | **Plus de 70±5mV** |
| | **Bande $CrO_2$** | **Plus de 80mV** |


Voltmètre électronique à C.A.
Appareil
(Terre)
TP402
TP401

## REGLAGE DE LA POLARISATION D'ENREGISTREMENT (DECK A)

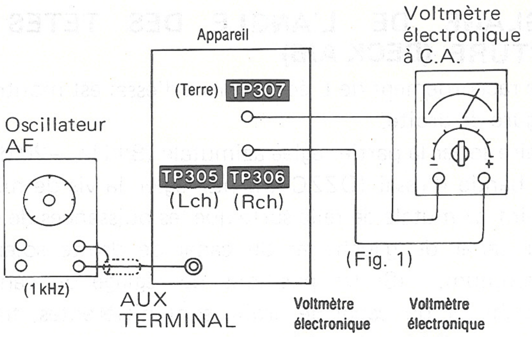
1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Placer l'appareil sur la position **"TAPE"** (bande).
3. Placer la platine pour cassette sur le mode **"REC"** [enregistrement (QZZCRA)].
4. Ajuster **VR307** (canal de gauche) et **VR308** (canal de droite) pour obtenir **4,8 ± 0,1mV** sur le voltmètre électronique de C.A.

| | | |
|---|---|---|
| **Valeur standard:** | **Bande normale** | **4,8±0,1mV** |
| | **Bande $CrO_2$** | **5—8,0mV** |

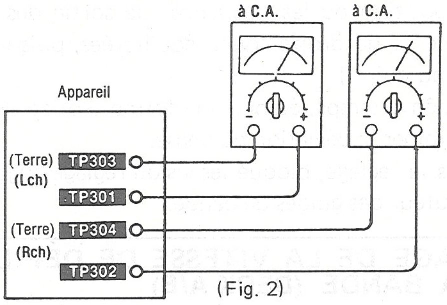

Voltmètre électronique à C.A.
Voltmètre électronique à C.A.
Appareil
(Terre) TP303
(Lch)
TP301
(Terre) TP304
(Rch)
TP302

## REGLAGE DU COURANT D'ENREGISTREMENT (DECK A)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration. (Fig. 1)
2. Placer l'appareil sur la position "**TAPE**" (auxiliaire) et la platine pour cassette sur le mode **"STOP"** (arrêt).
3. Court-circuiter à "**ERASE HEAD**" et **TP307 (Terre).**
4. Placer la platine pour cassette sur le mode **"REC"** (enregistrement).
5. Fournir un signal (1 kHz) oscillateur de fréquence audio à la borne **"AUX"** (auxiliaire) et régler le niveau d'entrée pour obtenir **410 ± 10 mV** sur le voltmètre électronique de C.A.
6. Le raccordement de l'équipement d'essai est montré sur l'illustration. (Fig. 2)
7. Placer la platine pour cassette sur le mode **"REC"** [enregistrement (QZZCRA)].
8. Ajuster **VR305** (canal de gauche) et **VR306** (canal de droite) pour obtenir **0,38 ± 0,01 mV** sur le voltmétre électronique de C.A.


Voltmètre électronique à C.A.
Appareil
(Terre) TP307
Oscillateur AF
TP305 TP306
(Lch) (Rch)
(1kHz)
AUX TERMINAL

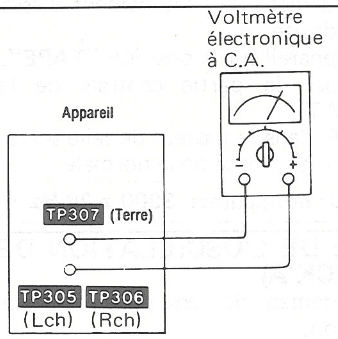
(Fig. 1)


Voltmètre électronique à C.A.
Voltmètre électronique à C.A.
Appareil
(Terre) TP303
(Lch)
TP301
(Terre) TP304
(Rch)
TP302

(Fig. 2)

## REGLAGE DE L'AMPLIFICATION DE LECTURE (DECK A/B)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Bande d'essai de lecture **QZZCFM** (315 Hz).
3. Ajuster **VR301, 302** (DECK B) et **VR303, 304** (DECK A) pour obtenir **410 ± 10mV** sur le voltmètre électronique de C.A.


Voltmètre électronique à C.A.
Appareil
TP307 (Terre)
TP305 TP306
(Lch) (Rch)

Printed in Japan
H870404300 YY/IM

D